

# WORKBENCH

35c/NOVEMBER - DECEMBER / 1963

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## Cabinet Dollhouse



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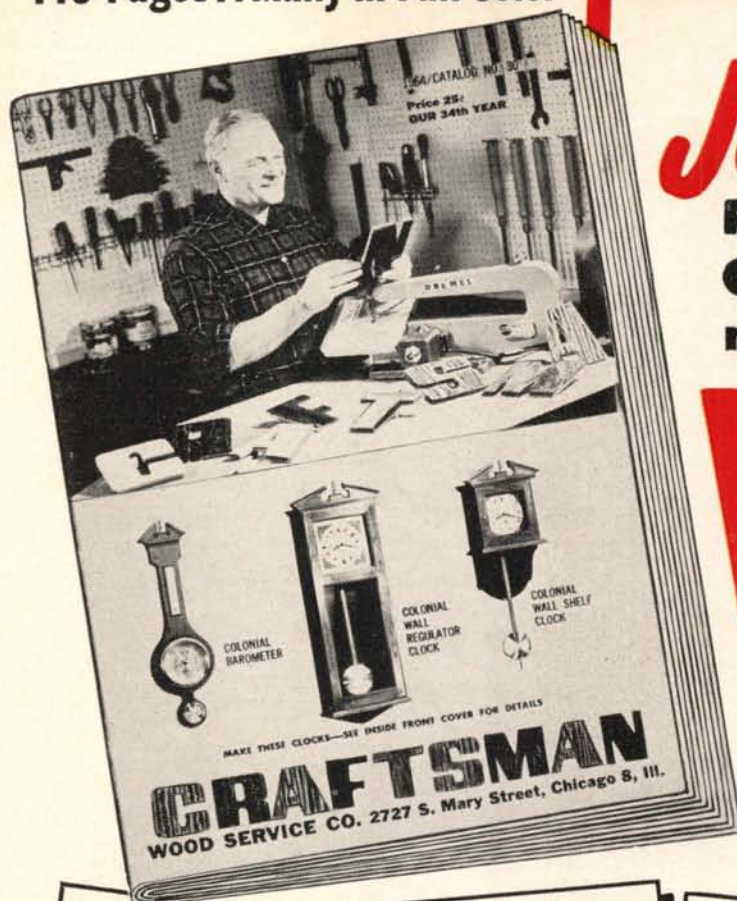
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# WORKBENCH volume 19 number 6

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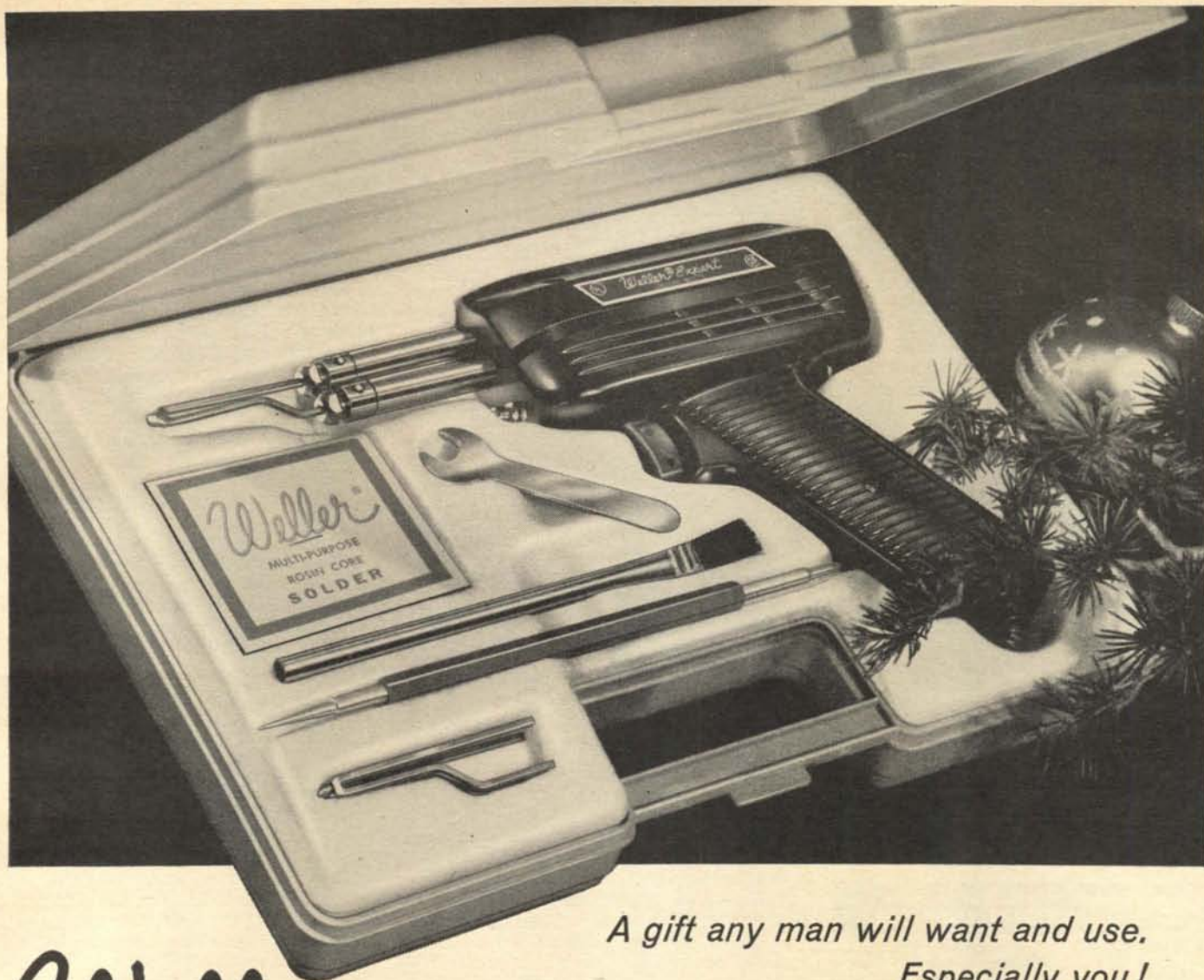
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# Letters to the Editor

Dear Mr. Hedden:

Wondering if any of your readers are "old-time" jig-saw fans. I use nothing but a 12-in. hand jig saw, been doing it for more than 60 years. Enclosed is a photo of my English coach and horse. The horse is in three pieces; a center section and a piece on each side for the legs on that side. Going to harness up the horse the way it indicated in the article "Horse and Cart From Norway" in a 1962 issue. Henry Hartman, Bushnell, Fla.



Dear Mr. Hartman:

The scrollwork on the coach is fabulous. How about it, readers, are any of you jig-saw enthusiasts?

Dear Mr. Hedden:

Some issues back you had an article on installing hardwood flooring (Sept.-Oct., 1962) in which you overlooked one of the most important developments in years. Any handyman can put down a fine oak floor, have it look as good as a professional job and take about 1/4 the time it ordinarily would take. He simply rents a "floor-nailer", a device that hooks under the edge of the flooring. A rubber-tipped piston is struck with a hammer and the flooring nail is driven at the correct angle and is countersunk in one operation. Rental was \$4.50 a day, a real bargain.

Peter Sherwood, Springfield, O.

Dear Mr. Sherwood:

An oversight by both our editors and the people at the Oak Flooring Mfrs. Assoc. We certainly will rent a unit to install our next floor.

Dear Mr. Hedden:

Enclosed is my renewal for WORKBENCH. May I take this opportunity to say it is the best magazine in the do-it-yourself field; keep up the excellent work.

Harold Lyon, Portsmouth, Ohio.

Dear Mr. Lyon:

Thank you for the renewal, and your kind words. An editor loves to hear such praise. However, we can always do better, and look forward to hearing from the readers as to what types of articles they would like to see.

Dear Mr. Hedden:

Noted in a recent Research Dept. that a fellow in Pleasant Beach, N. J. was having a rust problem. I lived in the tropics many years and would like to pass on a stunt that worked well for me: Place the tools in a closed tool cabinet—not air tight—and place an open tin can partly filled with kerosene at the bottom. We never had a rust problem.

A. C. Fox, Sterling Park, Va.

Dear Mr. Fox:

Your stunt is new to us. But if it works, a lot of our readers who live in humid areas would certainly thank you. Let us hear from anyone who tries this stunt to fight rust.

Dear Mr. Hedden:

The what-not stand in the photo is an item that I make and sell. It is copied from an 1830 style stand found in the old Merchants House in New York City. My stand has just four shelves, rather than five as in the original, permitting it to be smaller. The shelves are larger from bottom to top, the bottom shelf being 10 in., the top just 4 in.

Have been getting WORKBENCH for a number of years and would not be without it.

Roy Potter, Pontiac, Ill.



Dear Mr. Potter:

Your workmanship is excellent, and with the present renewed interest in antiques and classic furniture we are sure you sell every stand you make. Hope you are enjoying our series of articles describing the making of pieces of furniture now in museums around the country.



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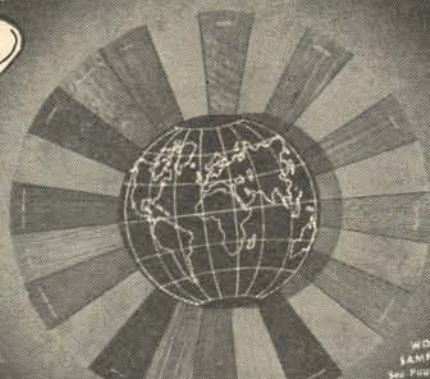
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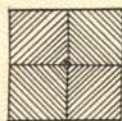
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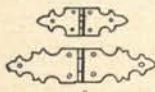
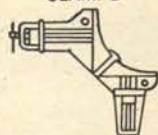
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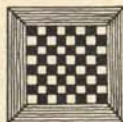
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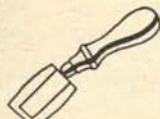
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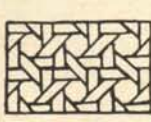
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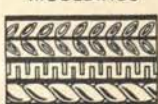
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Dear Mr. Hedden:

My hobby is wood carving and whittling, most of it done with knives. I made a seat that I can move around in my shop, in which are stored tools and supplies. If anyone wants to make a similar seat I can supply the plans for you to publish. Also, is there a publication dedicated to wood carving and whittling?

Frank Thrine, Batesville, Ind.



that country. Recently saw a Swedish magazine that was most interesting—we couldn't read it, of course, but used a Swedish-English dictionary to interpret some of the story titles and photo captions.

We have received letters from India, Ceylon, Mexico and from Argentina and other South American countries. American magazines are read avidly by people from other countries. They usually see them in embassies or United States Information Centers. Currency restrictions make it impossible in some countries for a resident to subscribe to publications from other countries.

Most comments we receive are about our frequent use of power tools. Many of the writers will never own a power tool in their life. Their hand tools are carefully maintained, and their craftsmanship is unquestioned. Power tools make a job easier and quicker, but craftsmanship still is a matter of personal skill, not power tools.

Dear Mr. Hedden:

We wonder if any of your other readers are rock collectors like my husband and me? We have built a number of projects, including the fireplace in the photo.

We would like to build a lighthouse of rocks, and wonder if you, or any of your readers would have plans for one.

Mrs. H. Stoltenberg, Idaho.



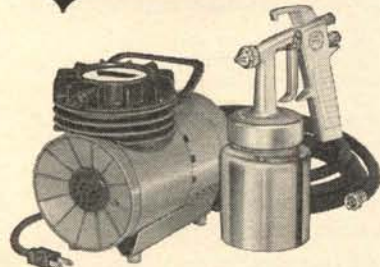
Dear Mr. Thrine:

Your various projects show that you have tremendous skill at your hobby. We are publishing a photo of your whittler's bench so our readers can tell us if they want plans for it. We know of no magazine for whittlers, but the National Wood Carvers' Association, 2946 Highland Drive, Carlsbad, Calif., publishes a mimeographed paper with information for whittlers. You can join this organization for \$1 a year, and there are no by-laws or other regulations, as the group is strictly informal.

Out of curiosity I have often wondered if there are do-it-yourselfers in other parts of the world. And, do they have their own publications like WORKBENCH?

H. R. H., Milwaukee, Wis.

There are do-it-yourselfers in most countries of the world, and they do have their own magazines. We exchange magazines with two Australian publications; their magazines are somewhat different than WORKBENCH in that they include gardening, home decorating and cooking, along with building projects. From South Africa we receive a magazine called—what else?—Do-It-Yourself. We receive several magazines from England; occasionally buy articles from writers in



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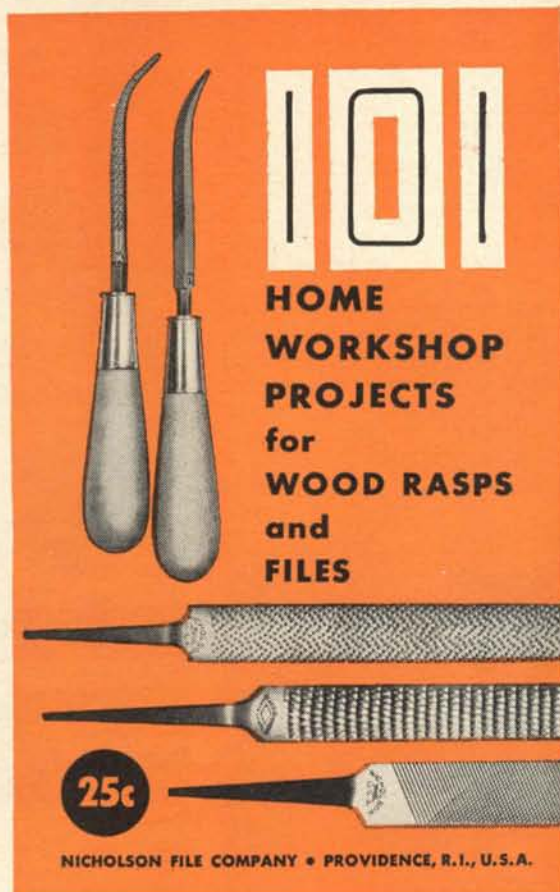


F. Grote Hubbel Co., listed in Part I of the Pool Table article state they are wholesale only and do not sell to individuals.

Jay W. Hedden



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Here's a book filled with facts on files and rasps...ways to use them...things to make with them. It was written especially for the Nicholson File Company by Edwin M. Love. And it's yours for only 25¢. All you have to do is mark and mail the coupon below.

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Here are two typical woodworking hints from the contents of the book: Truing bulwarks becomes easier and more accurate when a file is used... it shapes and smooths in one effective operation. A quick way to smooth the edges on jigsawed cutouts is to adapt a half round bastard file to mounting in the saw chuck.



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# MIRROR PANELS

One of the most attractive, and practical home-improvements we have seen in a long time are these mirror "tiles". The tiles are packed as a "kit", with twelve of the mirrors and the adhesive in a carton. The tiles can be positioned 3 x 4, 4 x 3 or 2 x 12, as illustrated in this article. We chose the latter shape, as it makes a fine "full-length" mirror for the ladies to make a last-minute check of their outfits. Instructions with the kit show the first row to be positioned with a wooden batten, or with masking tape. Because our mirror was "full-length", we used four finishing nails just above the base trim, Fig. 2. Five dabs of adhesive—one in each corner and one in the center—are applied to each tile as per instructions, Fig. 1. While the mirror tiles can be cemented to any dry surface, such as plaster, wood or even concrete, we chose to



use a 2 x 6-ft piece of hardwood paneling left from a job. The rough, back side of the panel provides an excellent surface on which to cement the tiles. The reason for using the paneling is that the mirror then can be moved from one location to another, even from house to house when you move. If cemented directly to wall it would have to stay.

After leveling the first row, Fig. 3.

Continued on page 10



1. As per instruction, five dabs of special adhesive are squeezed onto the back of each mirror "tile" to hold it.



2. First row of panels is held by wooden strip, or by nails as here. This first row must be leveled carefully on wall.



3. After first row is in place, succeeding rows are cemented to wall—or wooden panel—as described.



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2, the tiles went up quickly, Fig. 3 and 4. Fig. 5 is a closeup of the panels we used, the pattern being called Pearl Antique. Two other patterns, and plain mirrors are also available. The mirrors are top quality, and even with the patterns the mirrors reflect a sharp, clear image, as in our lead photo.

As a further experiment we cemented the mirror panels to a piece of hardboard that was placed flat



4. Mirror panels are packed carefully in special carton, each panel is easily pulled free from special holder.



5. This closeup shows the pattern in the "Pearl Antique" mirror panels; this is one of four different patterns.

on the floor, as in Figs. 6 and 7. After allowing the cement to set for 24 hrs., the assembly was picked up carefully and attached to a wall with mirror clips. We used 1/4-in. hardboard paneling, but found it too flexible for easy handling. We would suggest plywood at least 3/8 in. thick if you wanted to try this application. For more information on Mir-O-Wall: J. G. Budd Assoc., Inc., 3725 N.E. 1st Ct., Miami 37, Fla.△△



6. An alternate method of installing the mirror tiles is to cement them to plywood or hardboard as "portable" panel.



7. Special adhesive permits readjusting panels to position them exactly after all of them have been placed on wood.

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By Grant Mauk



Grant Mauk

It is natural for a man to dream. Without dreams of a better future we wouldn't have much to live for. But to make our dreams into reality, they must be put to work! They must lead to action. Otherwise they can rob us of all ambition and all initiative. How, now, can you turn your dreams into realities? How can you direct them into productive channels? How can you forge them into the weapons you need to achieve success in life?

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**GRANT MAUK, President, 3-56N Duraclean Bldg., Deerfield, Illinois 60015**

lay out the Plans for a new man and provide all the training and equipment he needs. Success is the logical result.

The business I am talking about is one of the fastest growing service businesses in America today. No office or shop is needed. If you have a telephone at home and a car with space in the trunk, then you have everything you need except what we furnish. Business comes to you on the telephone and in personal calls from leads we furnish. These leads come from National Advertising and from your own local Direct Mail Plan which we also furnish. You quote your price to the housewife, do the job or have one of your men do it and collect the money on the spot.

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## These Men Made Their Dreams Come True

You may be satisfied with a "one-man" business. These men operate that way: Ward Whitbeck wrote: "I have made as much as \$225.00 in one day." L. Lawson says: "In September, working alone, jobs totaled \$1,475." L. Canaday wrote: "\$1,571 in a single month." And G. Byers reported, "On one institutional job my charge was \$2,416.—total expenses, \$814.00."

If you wish, you can operate as the head of a multi-crew business with others doing the service work. You do the selling, write up the orders, direct your crew, and do the banking. These men have one or more others working for them:

Ed Kramsky wrote: "In my second year I now have two assistants, a nice home and real security for my family." And E. Davis reported "Gross income increased \$17,660 this year." Carl Smith wrote, "Earned \$650.00 in one week. Our volume is getting bigger all the time."

These are exceptional earnings, but they show what can be done when a man buckles down to business and makes a real effort to forge ahead. If they do nothing else, these earning records should act as an inspiration and incentive to a man who wants to harness his dreams and get more out of life than he may be getting now.

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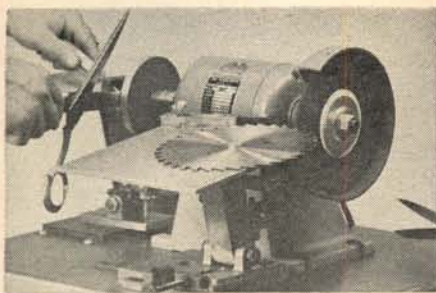
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# Shoppers'



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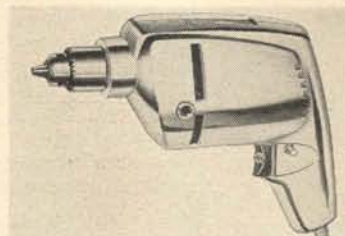
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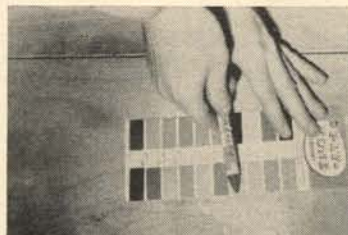
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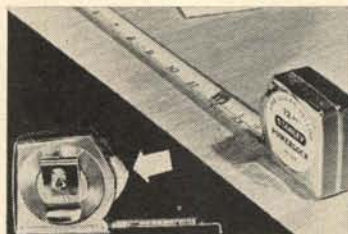
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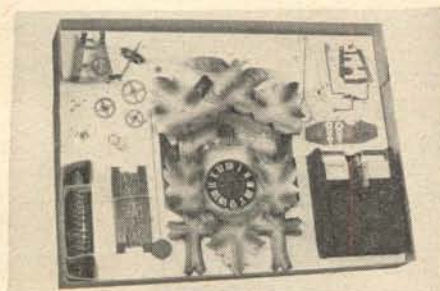
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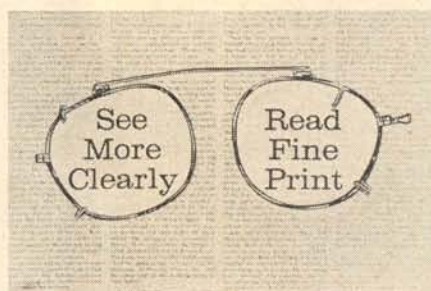


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# Showcase



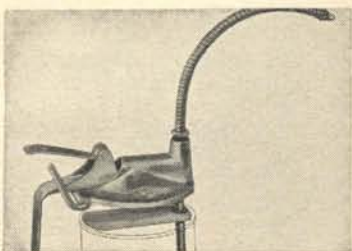
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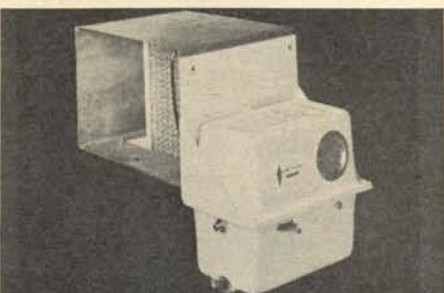


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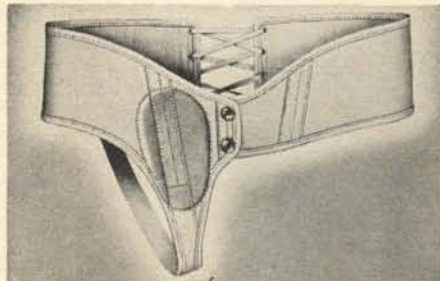
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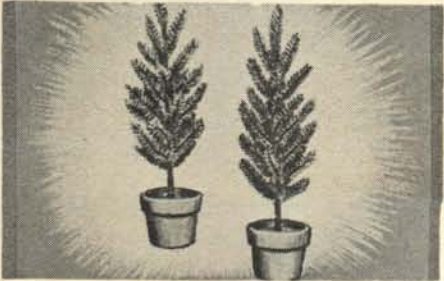
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No fitting required. A strong, form-fitting washable support for reducible inguinal hernia. Back lacing adjustable. Snaps up front. Adjustable leg strap. Soft, flat groin pad. No steel or leather bands. For men, women, children. Send measurement around the lowest part of abdomen and state right, left side or double. Single models, \$4.95; double models, \$5.95 plus 25c postage. Piper Brace, Dept. WB-113, 811 Wandotte, Kansas City 5, Mo.



## Live Christmas Trees 2 for \$1.00

For Christmas decorate tables with live, 3 yr. nursery grown, well rooted, 6" to 12" Colorado Spruce. Kept fresh in free pots for orig. transplanting outdoors. Satisfaction Guaranteed. Any tree not growing outdoors replaced free (5 yr. limit). Christmas offer—2 trees with 2 indoor planters \$1.00. 6 for \$2.50. If C.O.D. post. extra. Cash orders add 35¢ we ship ppd. Limited supply—rush order. Michigan Bulb, Dept. Ex 1608, Grand Rapids 2, Michigan.

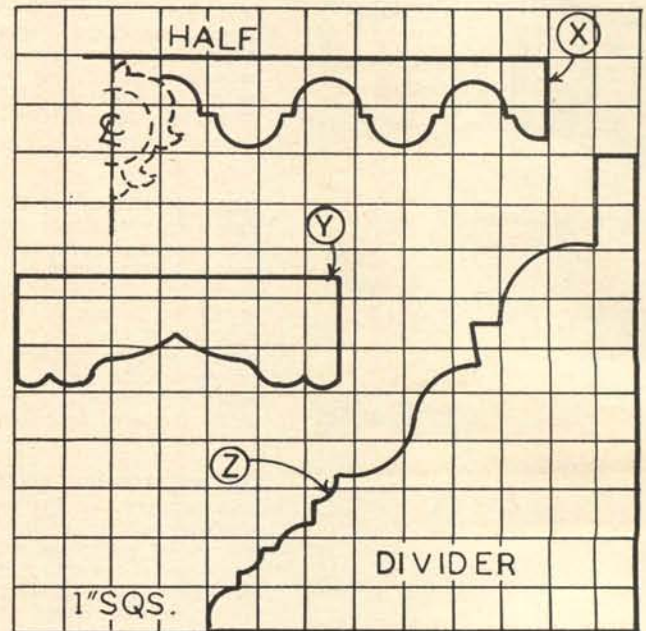


# Slant-Top Desk

LESTER MARGON

For our piece of classic furniture this issue we again return to the Wadsworth Atheneum in Hartford, Connecticut. The Conservator of the Wallace Nutting Collection kindly permitted us to measure and draw this delightful item that actually is a combination desk, chest of draws and a separate bookcase top. The sides of the desk and chest of drawers are one piece, while the sides of the bookcase are separate. This permits building the unit as two separate pieces. Quite likely the original designer used this method to simplify his job, as the desk was made about 1765, and hand tools were all the builder had.

The popular term for this style of furniture, "Pennsylvania Dutch", is incorrect. The builders came to America from the Rhineland and Switzerland about 1683, the first group arriving on the ship "Concord". They were escaping religious persecution and brought practically nothing with them. Thus, they had to build homes and furniture. The first furniture was crude and cumbersome and very few of these items exist. The "second generation" of homes and furniture built from 1750 to 1800 are of merit, and are the reason for the ever increasing interest in "Pennsylvania Dutch" items. While much of the furniture was painted



in brilliant colors with floral, animal, fruit and tree designs, many of the better pieces were left undecorated—as is the desk—so the natural beauty of the wood showed.

Quite naturally, most of the designs of this period were definitely inspired by European models, but because of the lack of tools and cabinetmaking skills, the work had to be simplified to a great extent. This is what gives the Pennsylvania German furniture a vitality and sturdiness that is its mark of distinction. Our desk is somewhat more sophisticated than the familiar "schoolmaster's desk" and the pine "storekeeper's desk", and foreshadows the mahogany Goddard breakfronts and Philadelphia highboys of a later date.

Construction is simple and straightforward. The panels of the doors are the only pieces that require shaping. They can be made with the aid of a router or shaper. The strips along the edges of the desk top can be fitted by means of a tongue-and-groove joint, or doweled. Partitions between the drawers, and those forming the pigeon holes in the desk, can be lengthened so a  $\frac{3}{8}$ -in. extension can be fitted in dadoes cut in the side members. Drawer construction is quite standard, the sides and bottoms fitting in dadoes in the drawer fronts; the same kind of construction is used in modern cabinetry. Cherry was the wood used for the original, as this wood was readily available in the Philadelphia area at the time of its construction. However, pine or other woods can be used.

If you are not a wood carver, the escutcheons for the keyholes can be purchased in brass from one of our advertisers who sell supplies to home craftsmen. Drawer pulls also can be purchased from the same sources. Marks on the two lower drawer fronts seem to indicate that the present pulls were not the original ones, so a different style, but of the same period, would be acceptable. We have found no source for the legs used on the desk, but it is a fairly simple turning. To show the natural beauty of the wood use a waxing lacquer or a clear, satin-finish sealer.







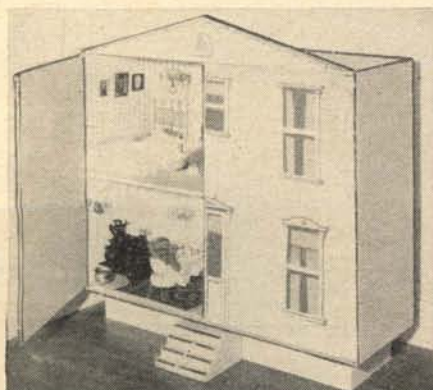
1. Birch-faced plywood combines with black-iron hinges and pulls to make this "Early-American" style doll house.



2. This style doll house is "French Provincial" as shown on cover. Note doors are divided into four sections.

## CABINET DOLL HOUSE

NORMAN and ESTELLE WORRELL



3. Windows and door painted on front of this doll house make it "Victorian" model. Steps are removable.

When we found that we could not purchase a doll house of practical size for the dolls owned by our daughters, we determined to design and build our own. The dolls are the extremely popular 8 and 12-in. sizes, (Barbie Doll, etc.), for which a large selection of clothes and accessories are available.

What started out as a simple search for information became a fascinating research project that led us back to the 17th century and through several museums in Europe and the United States. Our final design, Fig. 6, is a modern version of a cabinet-type doll house that first originated in Germany and the Low Countries. Figs. 1, 2 and 3 are variations of the basic design

shown in Fig. 6.

Birch-faced plywood and wrought-iron hardware are used on the version in Fig. 1, to produce an "Early-American" style. In Fig. 2 is a "French-Provincial" model, the house being painted off-white and decorated with gold. This is the house shown on the cover. It has "bi-fold" doors, a feature we found is a great space saver for a small room. The "Victorian" style in Fig. 3 is fitted with "steps," actually just a block of wood notched to provide steps. One feature of our doll houses that does not appear on the museum models is the recessed base. This provides toe room, and knee room when the youngsters are kneeling on the floor. It also raises



the first floor to a comfortable height for the children's play, while the second floor still is within easy reach. The drawing shows the recess only at the front. We have found this feature simplifies construction and makes the house more stable.

The triangular pediment on the top of the doll house subtly suggests a roof, yet the over-all impression when the doors are closed is a neat cabinet. This "furniture" look permits our cabinet doll house to be located in almost any room in the house. Incidentally, the flat top of the cabinet is a fine spot for "storing" items that the children leave out of the house when they have finished play. This eliminates the need for "cleaning up" after a play session, and both parents and children enjoy this feature.

Our modern version of the cabinet doll house does not have a noticeable characteristic that the houses in Figs. 7 through 12 have; that is the architectural features on the outside. Some of you parents and



4. Cardboard boxes can be used for one-room houses; keep sizes same as in doll house. Drawer pull is handle.



5. Here single-room doll house is placed on small end table. One-room units are fine as "portables."

# ALL STOCK $\frac{1}{2}$ " HARDWOOD PLYWOOD

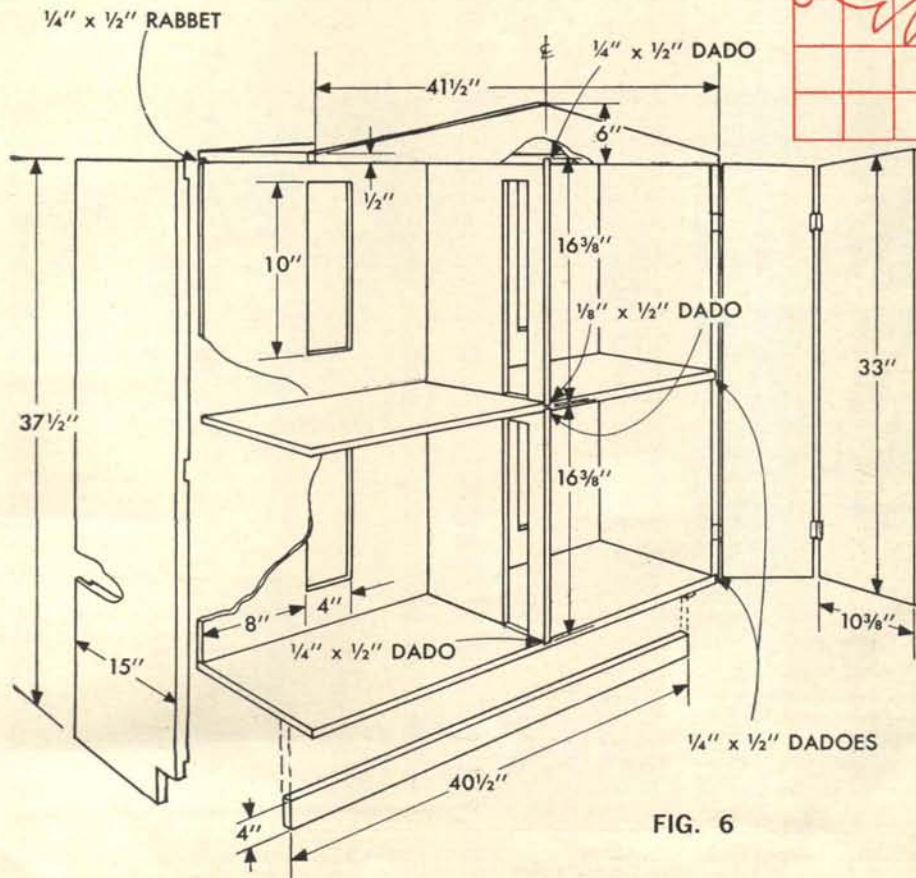
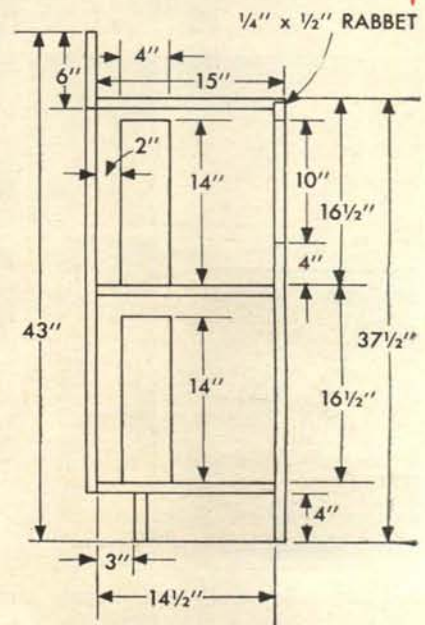
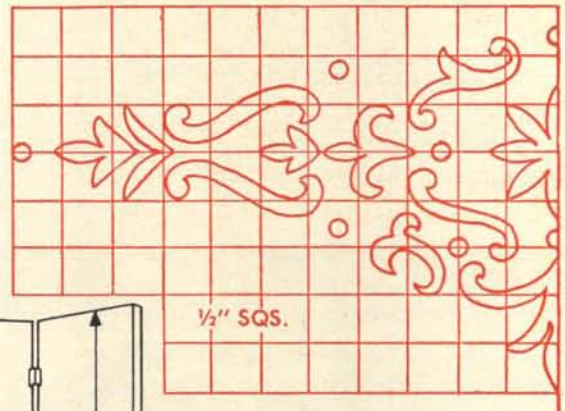
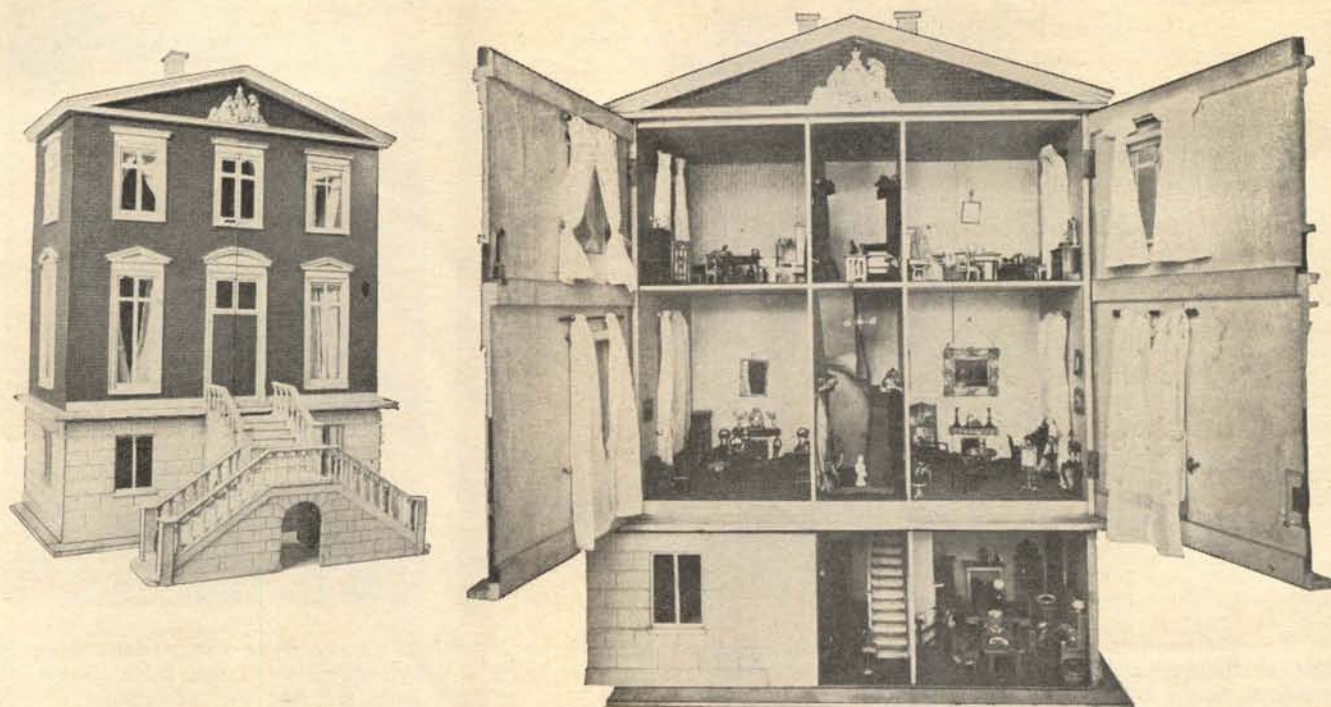


FIG. 6







7. Interior and exterior of Lansdowne House, 1860. It is in the London Museum, Kensington Palace, London, England. Note rooms in basement, center stairway.

grandparents may wish to include such features in the doll houses you build. While the doors, windows, etc., do give the structures more of a doll-house appearance, they also destroy the "cabinet" look.

In Fig. 7 is shown the Lansdowne House, Circa 1860. This doll house is in the London Museum, Kensington Palace, London, England. In this doll house the outside stairways are removable to permit opening

even the rooms in what might be considered a basement. In Fig. 8 is shown a Victorian doll house built in 1876 for Bessie Lincoln, (Mrs. Murray A. Potter). This model is in the Essex Institute, Salem, Mass.

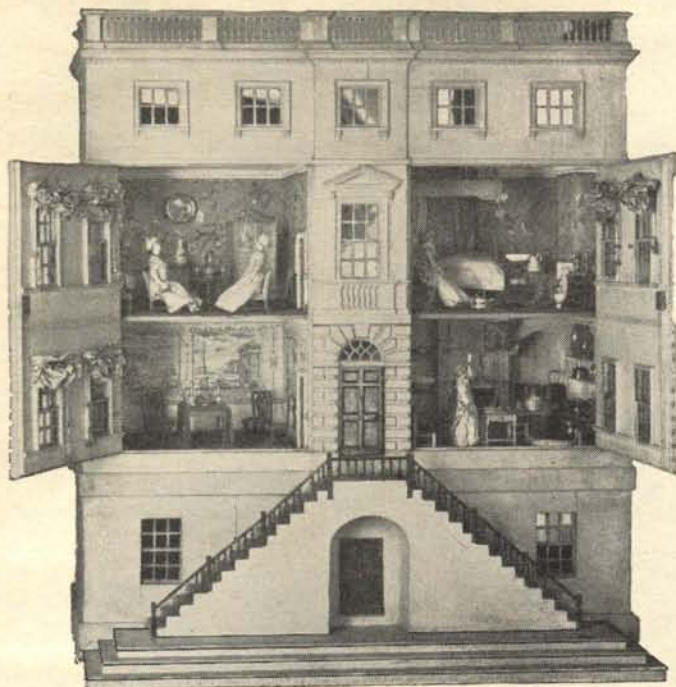


8. Late "Victorian" doll house, American, 1876. Note drawers in base and stairway. Essex Institute, Salem, Mass.



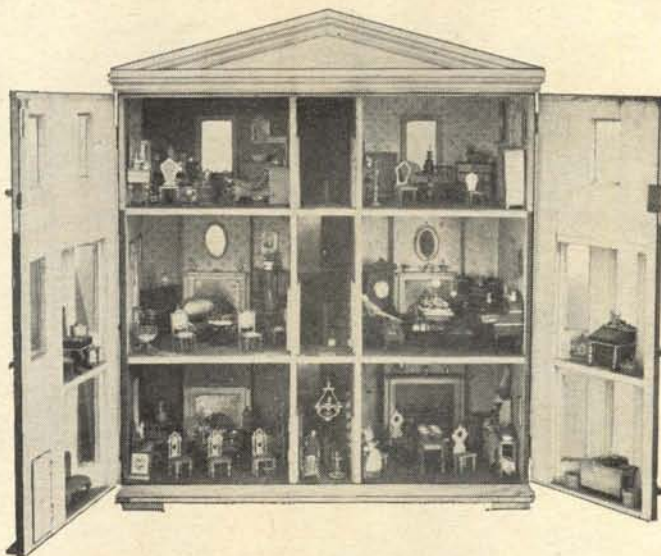
9. Another in Essex Institute Collection is this doll house made in 1852 for Annie C. Warren children. Note pantry.





10. In London Museum is "Blackett Baby" doll house, 1740. Note that cabinet displays architectural features.

11. Made in 1879, this house was given to Princess May of Teck, later Queen Mary. It is in the London Museum.



Another Victorian doll house in the same institute is in Fig. 9. Note that the pantry in the center of the second floor has a complete collection of china that is much too large in scale for the furnishings in the rest of the house. In Fig. 10 is another doll house from the London Museum. This is the "Blackett Baby" House built in 1740. The wallpapers and window draperies are the original. This Victorian model also features the high foundation that had rooms in it. Fig. 11 is a most interesting doll house for two reasons. First, it has bays on the first and second floors that are in the doors. Second, the doll house was given to Princess May of Teck when she was 12 years old (1879). Princess May later was Queen Mary of England. This is not the "Queen Mary's" doll house which was made some years later. The "Princess May" doll house also is in the London Museum. Fig. 12 shows a one-room doll house called the "Nuremberg Kitchen," made in the 17th century. This model probably was intended to teach little German girls the arts of cooking and housekeeping. This doll house is in the Victoria and Albert Museum in London, England. Our modern versions of the one-room doll house are shown in Figs. 4 and 5. These are "portable" units made from cardboard boxes. They are made the same size as the rooms in the cabinet doll house.

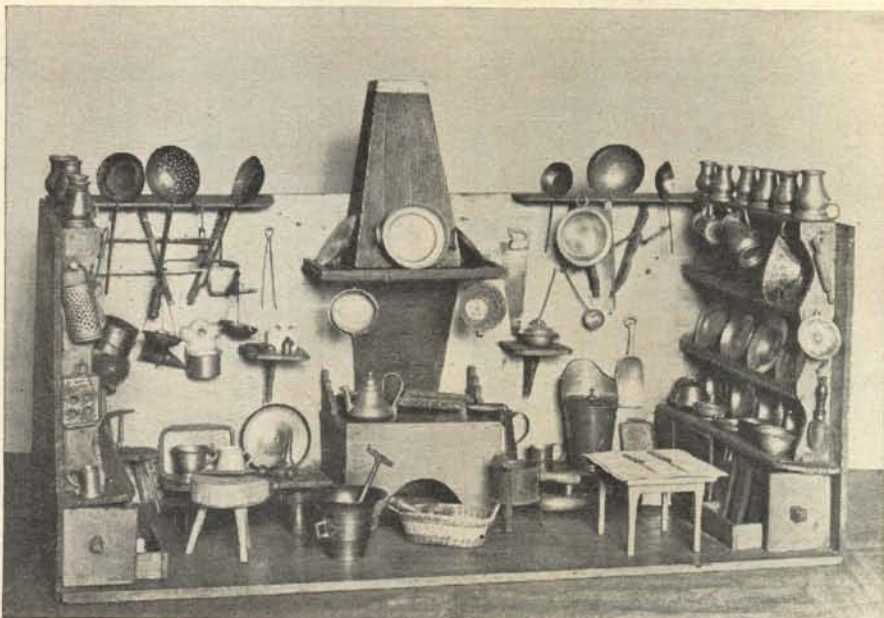
No, the rooms, and the doll house, are not to exact scale. They cannot

be, as they must accommodate dolls both 8 and 12 in. high. The scale is one most "visually acceptable."

Using the basic cabinet plans, and adding any features you like from one or more of the museum models, you will come up with a highly individual doll house that will delight any youngster, and which will be fine for the very popular 8 and 12-in. dolls that many little girls will get for Christmas. Furniture for the house, also designed after much

research in museums and furniture collections, (full-size furniture, not doll furniture), is described in the Women's Page. Ordinary household materials are used to build the furniture. All the items shown in the French-Provincial style doll house are made as described in the furniture-making story on the Women's Page.

Photos of museum pieces shown by courtesy of the copyright owners,  $\Delta \Delta$



12. "Nuremberg Kitchen" of the 17th century, is in the Albert and Victoria Museum, London, England. Elaborate furnishings "inspired" little German girls.





## Beautify Your Basement... PART II

If you have followed through on the information provided in Part I of this series of articles you have made a scale drawing of your basement and indicated how the rooms are to be arranged. You have cleaned the basement, discarded everything not needed and stored items to be kept in areas that your plan indicates will be storage areas in the finished remodeling. You also

have sealed the foundation walls, where that was necessary, and installed ribbon or picture windows as desired. We are not describing the installation of such windows, as this subject is well covered in the booklet available from the Bilco Co., as indicated in Part I.

The next steps are to build partitions between the rooms, and to apply a covering to the foundation

walls. Partitions in a basement need not be load-bearing members, so structural strength is of secondary importance. The simplest, least expensive partition is a standard framing of 2x4 studs, Fig. 1. If you want the maximum floor space, position the 2x4s sideways and use a 2x2 for the top and bottom plates. The resulting wall will be about half as thick as "standard."



1. Studs in partition were spaced 24 in. on center. Partition was framed on floor, then raised in place and plumbed.



2. Partition for den-office is covered with La Honda redwood paneling. Usually installed vertically, it is horizontal.

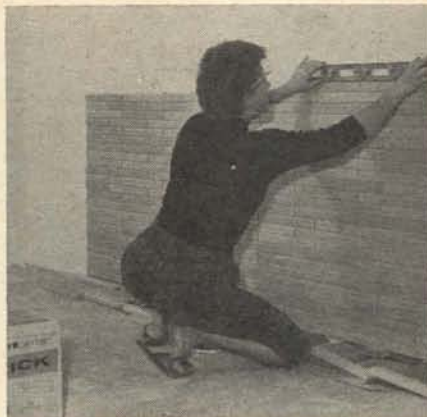


3. Straight lengths of 1x2 furring strips were used to frame in cabinets. Redwood paneling was glued and nailed.





4. Z-Brick was installed on outside walls. It is cut with ordinary saw and miter box. File is used to shape edges.



5. Keeping rows of bricks level is important; start with first row, must run to last brick in the last row.



6. Just three dabs of cement are used on each Z-Brick, then it is slipped into place on wall against adjacent bricks.

You can build the framing on the floor, then raise it in position, if you follow one rule: Make the height of the wall about  $\frac{3}{8}$  in. shorter than the shortest distance between the basement floor and the floor joists overhead. The  $\frac{3}{8}$  in. will allow you to raise the framing in position without the need for forcing. Fit shingles under the framing, then plumb the framing, Fig. 1, and nail the top plate to the joists. Jam the shingles under the bottom plate until the framing is fitted solidly in place. For more positive positioning, drive concrete nails down through the bottom plate and shingles into the concrete. You can rent a powder-actuated gun for driving fasteners or you can use one of the hammer-powered devices, such as Ramset. Gobs of epoxy resin also can be used. In the example shown, one end of the framing was fitted against a pilaster in the concrete-block wall, the other end was joined at right angles by another wall. This setup made the wall quite rigid, and no fastening to the floor was required. The shingles used for shimming were "second-course shingles, as used under finish shingles to make a stronger shadow line. A bundle of the second-course shingle is inexpensive, and you will find dozens of uses for them in the basement remodeling project.

As stated in Part I, the den-office, lead photo, was the first room finished. After setting up the wall framing it was covered with La Honda Redwood Paneling. This heartwood redwood is  $\frac{3}{8}$  in. thick

and the strips are tongue and groove. We applied it horizontally, Fig. 2, rather than vertically, which is more conventional. The horizontal application was saving on material, as the 8-ft. panels would have to be cut for the basement partition which was about 7 ft. high. Horizontal furring strips also were eliminated, such as required in Fig. 11 for the paneling.

Lengths of 1x2 furring strips were used to make a rough framing for cabinets in the office, Fig. 3. Scraps of plywood were used for shelves, while the outside of the cabinets was covered with La Honda Redwood Paneling. Short pieces of the paneling were used for the doors. The paneling was attached with brads and white glue. The resulting assembly is rigid and attractive. A desk was fitted between the two cabinets, being made from a frame of 1x2s on which a sheet of hardboard was glued and nailed. The desk was installed after the wall covering was applied.



7. Plywood strips were cemented to concrete basement floor with epoxy adhesive. Excess was chiseled away.

The wall covering is Z-Brick, a most attractive material. It is available in several colors, including white. In our basement we used Sahara Gold. The Z-Brick can be



8. Easy-Wall Partition goes up quickly, both sides of the partition being plastic-coated hardboard. Center is softboard that is sound-absorbent. Panels are 2 ft. wide, are joined with plywood splines. Create ideal partition.







9. Bottom of Easy-Wall Panel rests on plywood strip, is held with trim.



10. Cove molding is nailed to ceiling strip on both sides of panels to hold them in place. Removing molding at top and bottom permits quick panel removal.

cut with an ordinary hand saw, Fig. 4, or with a backsaw and miter box. We used the latter to make sure the ends were square. A rat tail file is used to restore the "mortar groove" when the individual bricks are cut. Because most basement floors are quite irregular, the main problem was to get the first row of bricks level; we did this with shims of wood and cardboard. We kept a constant check on the level, Fig. 5, as we applied the brick. Three dabs of special adhesive are applied to the back of each brick, and it simply is pressed firmly against the wall, Fig. 6.

Another most interesting material we used in the remodeling project is called Easy-Wall Partition, Fig. 8. This paneling consists of a core

of softwood that is both heat and sound insulating, on each side of which is a sheet of plastic-surfaced hardboard. The panels are 2 x 8 ft., and a full 1½ in. thick. The material is not inexpensive, but as no studding and no paneling are required, the "in-place" cost is only a little more than a stud-and-paneling wall. Plywood strips are provided to join the grooved edges of the panels and also to fit at the top and bottom. We cemented the bottom strip to the floor with an epoxy compound, Fig. 7. Excess compound was scraped off the floor with a wood chisel after it had dried. A trim strip at the bottom, Fig. 9, and at the top, Fig. 10, is nailed to the plywood strips. The Easy-Wall Partition then "floats" between the floor and ceiling, being

held in place by the trim. Matching paneling, which is ⅝ in. thick, with surfaced hardboard on one side only, Fig. 11, is available. The material is ideal where paneling is to be applied to the outside walls, as the Easy-Wall Partition then can be used as divider walls at right angles, as in Fig. 11.

We applied the Armstrong ceiling tile first, then nailed the top plywood strip over it. This did present some problems, and the upper strip would have been more solid if nailed directly to the joists, but it eliminated the need for cutting and fitting two rows of ceiling tile.

For more information on the various products mentioned:

Armstrong Cork Co.  
Lancaster, Pennsylvania  
Classic Cushiontone Ceiling Tile

Simpson Timber Co.  
2040PC Washington Bldg.,  
Seattle 1, Washington  
La Honda Redwood Paneling  
Easy-Wall Partition  
Easy-Wall Paneling

Vermiculite Mfg. Co.  
2107 N. 34th St.  
Seattle 1, Washington  
Z-Brick

Bilco Co.  
New Haven 5, Conn.  
Basement Planning Booklet,  
25 cents for handling.

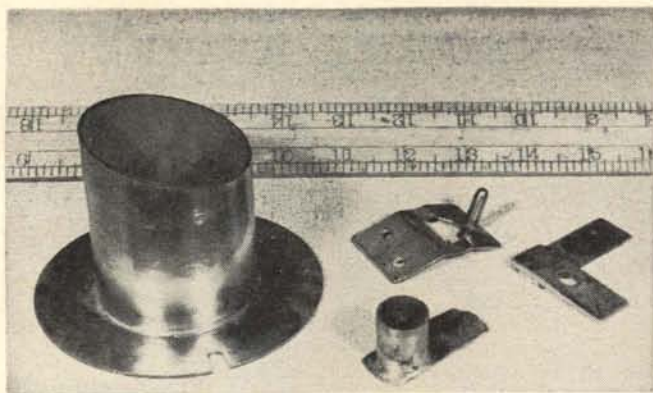
Ramset, Winchester-Western Div.,  
Olin, New Haven 4, Conn.  
Fastening Tools

*To Be Continued*



11. Easy-Wall Partition has matching paneling that can be stapled over furring strips.





Above: A few samples of work silver-brazed and bronze-welded with torch described in this article. Work can be almost miniature, on up to fairly large size as indicated.

Right: A setup of firebricks is used to support work, prevent loss of heat, as happens with metal vise. As substitute, use 4 in. of sand in a sheet-metal box; keep sand dry.



# BRAZING TORCH

ENNO R. HAAN

Ideal for home workshops, this high-temperature torch permits silver brazing, bronze and aluminum welding and other heating jobs that smaller torches cannot handle. It operates on gas and compressed air from a vacuum cleaner. Each supply is controlled by a petcock on the torch so flames from a tiny jet to one over 8 in. are possible.

Any of the various kinds of city gas, (natural, manufactured or mixed), or liquified petroleum, (LP), gas can be used. The latter has a higher heat rating — about 2,550 B.T.U.'s per cu. ft., as compared to 500 to 1,000 per cu. ft. from city gases.

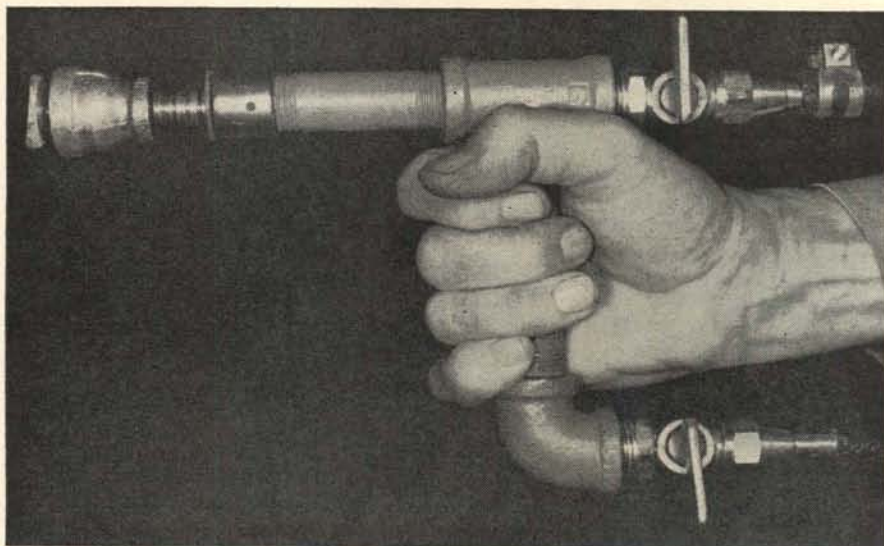
LP gas is inexpensive when purchased in cylinders sold for domestic use. A 20-lb. cylinder that costs about \$1.75, (on exchange of tank), will operate the torch described for 35 to 45 hrs. when the gas pressure is at 11-in. water column on a manometer. A similar torch with gas at the same pressure, and with a No.-70 drill orifice will last 65 to 75 hrs. on a 20-lb. tank of gas.

The torch is made largely from pipe fittings, but requires some careful machining of small parts that can be done on a drill press. The torch body is made of ½-in. pipe fittings, Fig. 1. The method of connecting petcocks to the tee and

elbow depend on the type you obtain. You can use gas-appliance petcocks with a tapered shank for connection to rubber tubing; our model has petcocks threaded for ⅜-in. pipe. Methods of connecting the rubber tubing also vary; two are shown in Fig. 2. The petcock for gas control is drilled and tapped for ⅜-in. pipe at the end that

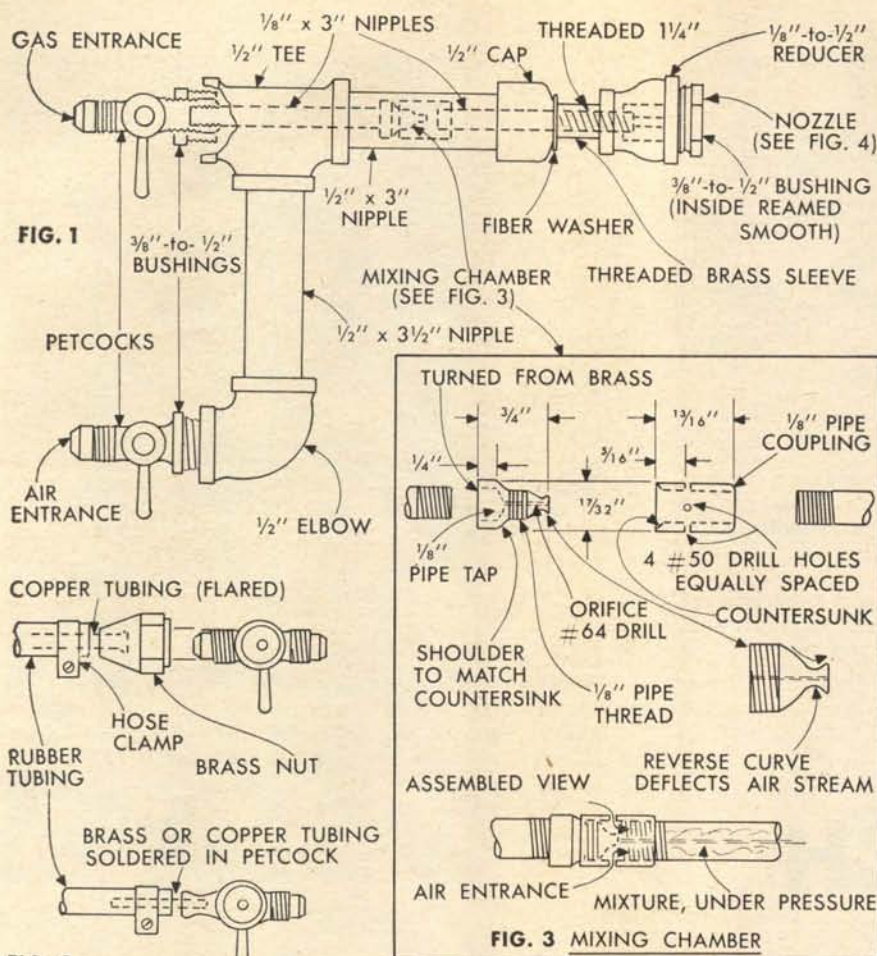
screws into the body. Tap carefully so the pipe nipple will project straight in perfect alignment with the centerline of the petcock. Test for leaks using soapy water on the joints; all joints must be gas-tight.

Next, make the gas-and-air mixing chamber, Fig. 3. Turn down an orifice plug from ½-in. brass rod, or from a brass lampshade

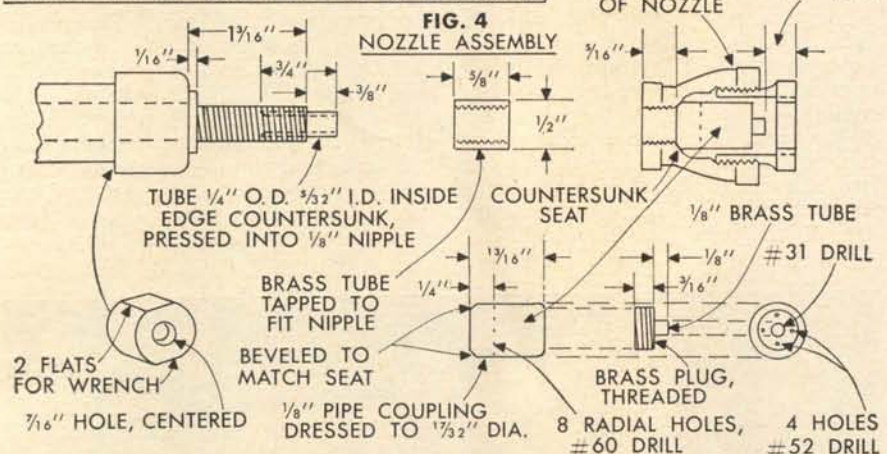


This closeup view of the brazing torch shows its balanced construction, ease of handling, and the convenient location of gas and air petcocks.

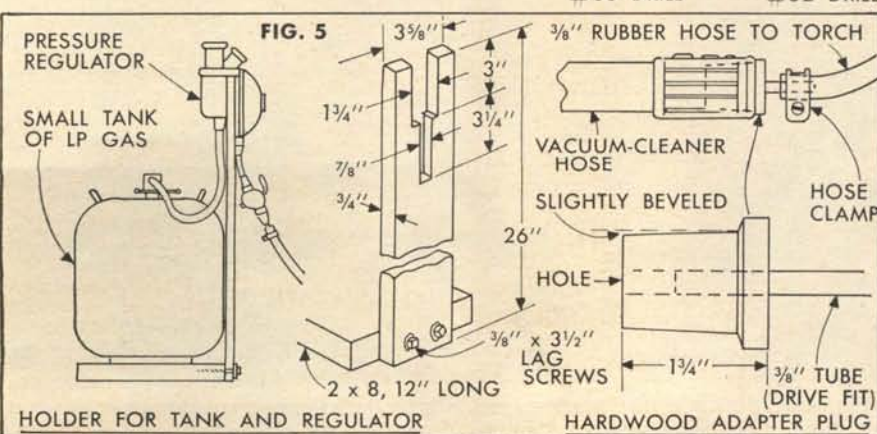




**FIG. 2**  
ATTACHMENT OF RUBBER TUBING TO PETCOCKS



**FIG. 4**  
NOZZLE ASSEMBLY



riser. Its tip projects past the location of the No. 50 holes drilled in a  $\frac{1}{8}$ -in. pipe coupling turned down to smaller diameter. Size of all holes is important.

As in Figs. 1 and 3, another pipe nipple is screwed into the coupling to extend exactly 1-3/16 in. beyond the  $\frac{1}{2}$ -in.-pipe cap when all fittings have been drawn up tightly. If too long, cut it down. Then disassemble the parts so you can thread the nipple to be 1  $\frac{1}{4}$  in. long. Drive a  $\frac{1}{4}$ -in. tube of aluminum, brass or copper into this end, letting it extend just  $\frac{3}{8}$  in. You can now reassemble the torch, as other fittings are to be screwed into the projecting nipple.

Slip a 1/16-in. fiber washer on first, then the brass tubing tapped to screw on the nipple, ( $\frac{1}{4}$ -in.-pipe tap). Next, countersink the small end of the  $\frac{1}{8}$ -in.-to- $\frac{1}{2}$ -in. reducer on the inside to form a seat for the nozzle, then screw the reducer in place. From the small end of the reducer to the end of the nozzle is exactly 5/16 in.

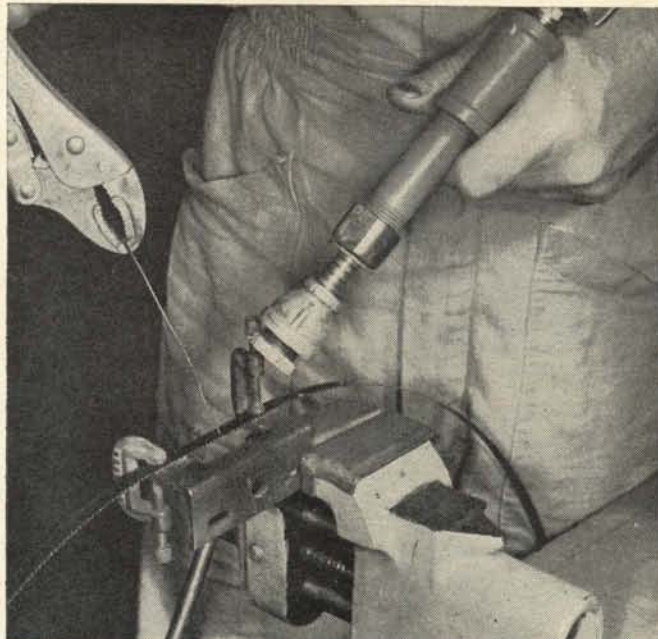
Make the nozzle from a  $\frac{1}{8}$ -in. pipe coupling dressed down to 17/32 in. diameter. Bevel one end to match the seat in the reducer. Drill eight No.-60 holes through the wall of the coupling exactly  $\frac{1}{4}$  in. from the beveled end. For the plug at the other end, turn down the end of a brass rod to 13/32 in. and tap it to engage the coupling 3/16 in. Then cut the rod off flush and file smooth. Bind the plug by prick-punching along the joint between plug and coupling, after which drill holes through the plug as in Fig. 4. A slightly tapered  $\frac{1}{4}$ -in. length of  $\frac{1}{8}$ -in. brass tubing is driven into the No.-31 center hole. Push a needle through the side holes to clear them, then screw the nozzle in place, using two small brads in the end holes for grip. Finally, screw on the  $\frac{3}{8}$ -in.-to- $\frac{1}{2}$ -in. bushing after reaming out the inside. There should be uniform clearance all around the nozzle. All that remains is to connect to the gas and air hoses that should be 6 to 8 ft. long. A holder for the torch is shown in Figs. 6 and 8.

An LP gas tank and pressure regulator should be kept outdoors at least 3 ft. from any door or window. The gas is piped to the workshop through  $\frac{3}{8}$ -in. copper tubing. Provide a petcock at the tank location and at the end of the line in the shop. Keep the gas turned off at the tank when not in use. For jobs that cannot be done in the shop, you can carry tank and regulator to the work with an improvised holder, as shown in Fig. 5. The tank and holder are strapped together to simplify carrying. Gas pressure should be 11 in. on a manometer at the point where the rubber tubing connects to the





6. This simple holder bolted to the bench supports the torch within easy reach. Holder consists of 12-in. pipe nipple fitted with floor flange and U-shape wire hook.



7. Many jobs are held with jigs and clamps. This steel-angle jig for brazing bandsaw blades is held in vise; large notch is cut out of one side of the angle so blade is in the clear.

torch. A hardwood adapter, also in Fig. 5, is turned to fit snugly in the end of the vacuum-cleaner hose.

With the air petcock closed, the gas is turned on slowly while a match is held at the torch nozzle. When a small, luminous flame appears, Fig. 9, start the vacuum cleaner. Open the air petcock slowly, then adjust the flame using both petcocks, until the inner cone is a bright blue and has a slightly fuzzy tip. The outer cone should be practically colorless or slightly bluish, with no yellow. The highest temperature is at the tip of the inner cone. The larger the work, the larger the flame that is needed. Castings are preheated in a three-sided "oven" over a gas plate, Fig. 10. The surface on which the work is placed can be firebricks on a sheet of metal or asbestos paper, or you can use sand in a sheet-metal box.

Silver brazing is easiest, and properly done joints will have a tensile strength of from 40,000 to 60,000 lbs. per sq. in. A slight clearance at joints—about .002 in.—permits molten silver alloy to run into the joints. Surfaces to be joined are cleaned of oil, dirt, rust, etc., using steel wool. For flux use a saturated solution of borax, or a commercial flux. This should cover the surfaces to be joined. Flux the joint, then heat it to a temperature that will melt the silver when it is touched to the metal. The silver alloy should not be touched by flame. As with any kind of welding, silver-brazing requires some practice.

For bronze welding you need

bronze welding rods and special flux. Flux is applied to the end of the heated rod. The base metal is heated to a red glow, then kept at this temperature while the welding rod is being melted. Too low a temperature of base metal prevents the bronze from flowing, too high a temperature causes the molten bronze to boil and scatter in tiny globules. If the metal conducts the heat away so fast that the glowing stage cannot be reached or maintained, the work is too large for torch alone and an oven, Fig. 10, is required for additional heat.

For aluminum welding a special flux also is needed. The paste flux is brushed on the surfaces to be

joined. For sheet aluminum a small flame is used and is directed at the work at a 30-deg. angle to prevent melting holes in the base metal which can melt suddenly anywhere from 860 to 1,250 deg., depending on the alloy. Feed the end of the welding rod to the tip of the inner cone while holding it about 1/4 in. above the work surface. Keep the rod in the molten puddle and stir the puddle with the rod as you proceed, which brings oxides to the surface. Often pieces of metal to be joined must be positioned with jigs, clamps, or both, as in Fig. 7. When sheet-metal edges are to be joined, the metal often is tack-welded at two or more points prior to welding.  $\Delta \Delta$

FIG. 8 TORCH HOLDER

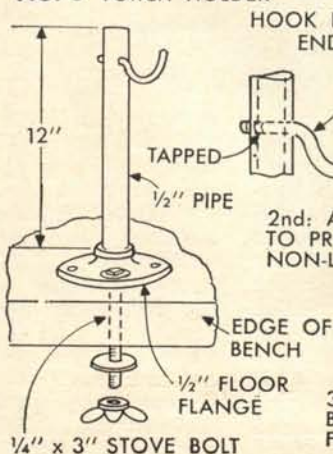
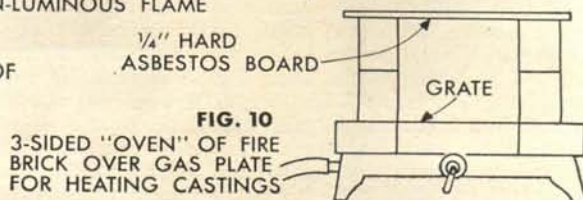
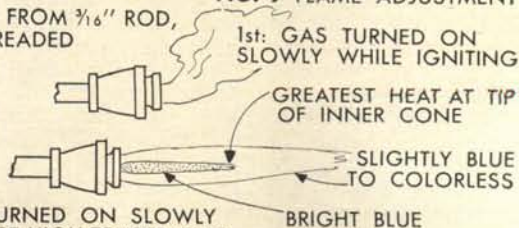
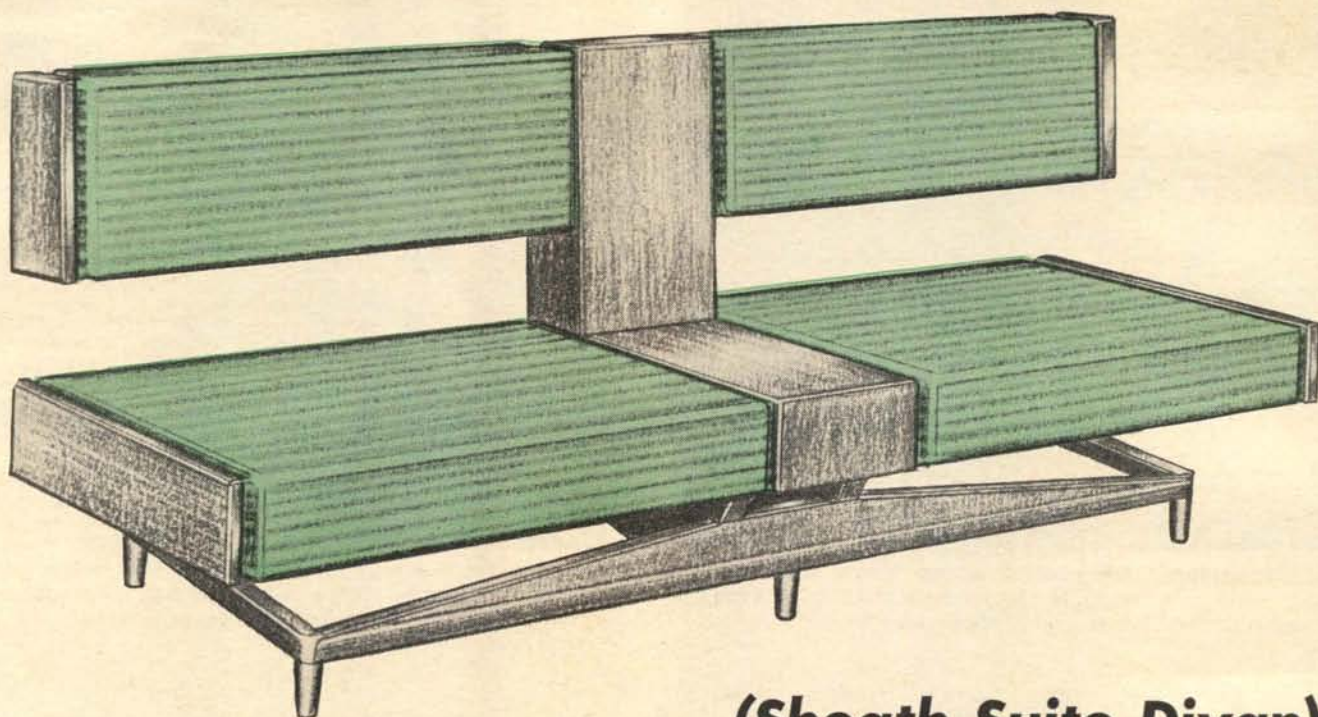


FIG. 9 FLAME ADJUSTMENT





# MODERN SOFA



**(Sheath-Suite Divan)**

Requests from readers asking for furniture of contemporary design have specified that the items must have a "Flair of the Future," yet be reasonably simple to build and completely practical to use. These were the specifications we gave to Don Cartner Associates, Industrial Designers, when we commissioned them to design a complete set of modern furniture. The sofa described in this article is the first in the WORKBENCH "Contemporary Collection".

The sketch of the sofa shows its exciting modern styling, a study of the drawings will show that construction is simple, even though there are quite a number of pieces to be assembled. As for being practical in use, the upholstery covering consists of four slip-on sheaths that are held in place with elastic bands in the ends. When it is necessary to clean the upholstery material, or you wish to "re-upholster" the sofa, you simply slide off the sheaths. The upholstery method even permits stains to be hidden by simply rotating the sheaths to locate the stain under the seat, or at the rear of the back.

First step is to carefully study the detailed drawings of the various parts of the sofa frame. Next, build each assembly as detailed. Note that all solid stock is walnut, all panels are walnut-faced plywood. Other types of hardwood can, of course, be used. After building the various components start assembly by attaching the center-frame assembly to the back and seat frames. The center-frame assembly is shown in Detail E. The back-frame and seat-frame assemblies are shown in Details A and D. Attach the center-frame assembly to the back frame with four No. 16 flathead screws 3 in. long. The seat frame is held by four No. 16 flathead screws 3 in. long. The end-cap assemblies on the back are held with glue and four No. 10 flathead screws 1 3/4 in. long. The end caps on the seat frame are held with glue and four No. 16 flathead screws 3 in. long. The bottom-panel assembly is next

attached to the seat frame with glue and four No. 20 flathead screws 4 in. long. The base assembly is attached to the bottom panel with six No. 18 roundhead screws 4 in. long. Glue should be used generously at all joints, any excess should be wiped away.

With the framing complete, tack all jute webbing in place. This will require a webbing stretcher and upholstery tacks. Follow this operation with webbing-retainer strips. Plastic foam of the dimensions given is fitted to the frame and spot-glued to the jute webbing. Muslin covers now are made for the foam. (Best to get the wife in on this operation, as well as for the sheaths.) Tack the muslin covers in place. Upholstery sheaths of your choice of material now are made. Allow the elastic tape to slide freely within the hems of the sheaths. The tape ends are sewed together at the bottom seam, (Section B-B). Make the tape about 4 in. shorter than the upholstery material so it will hold firmly when the sheaths are slipped over the frames.

If you have not done so before now, all exposed wooden members of the sofa should be sanded and finished. The sheaths are readily removed and put aside while the finishing operation is done. Six legs are used under the base assembly; if you do not want to make them, they can be purchased.

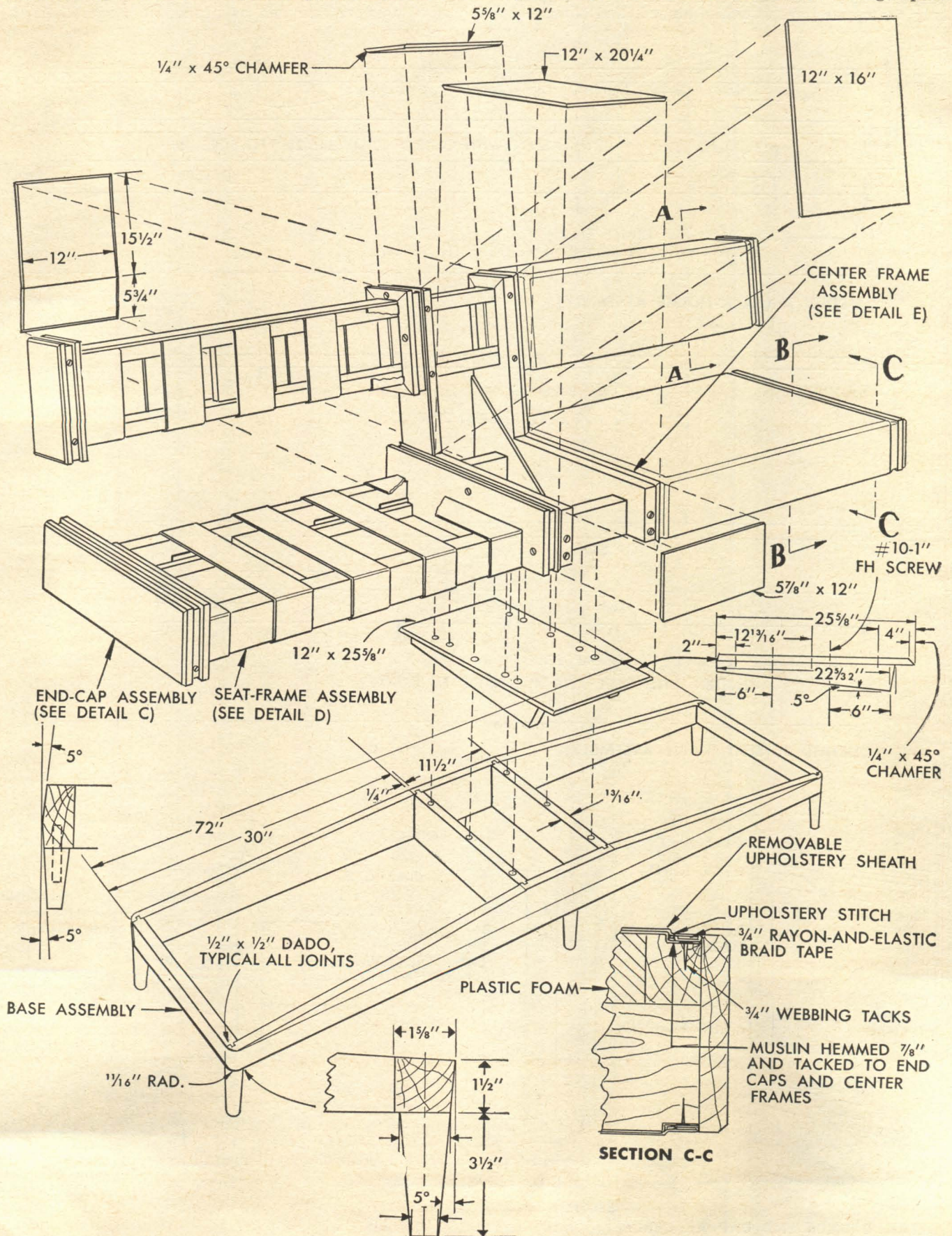
Some assembly notes: While the plywood gusset for the center frame, and the top of the bottom-panel assembly can be cut and fitted, we suggest the rest of the paneling not be cut until after the framing has been assembled. Slip the seat and back frames through the center-frame assembly, center them and attach with glue and screws as indicated. Then, measure for the panels that fit over the center section. In this manner you can correct for any minor errors in dimensions you might have made. The end caps go on the seat and back frames last, if you wish, and the panel ends also can be cut and fitted after the caps



are in place. Use top-quality, furniture-grade hardwood for all framing and the base. This will assure that the sofa will stand up to rugged use, and the

framing will not twist or warp.

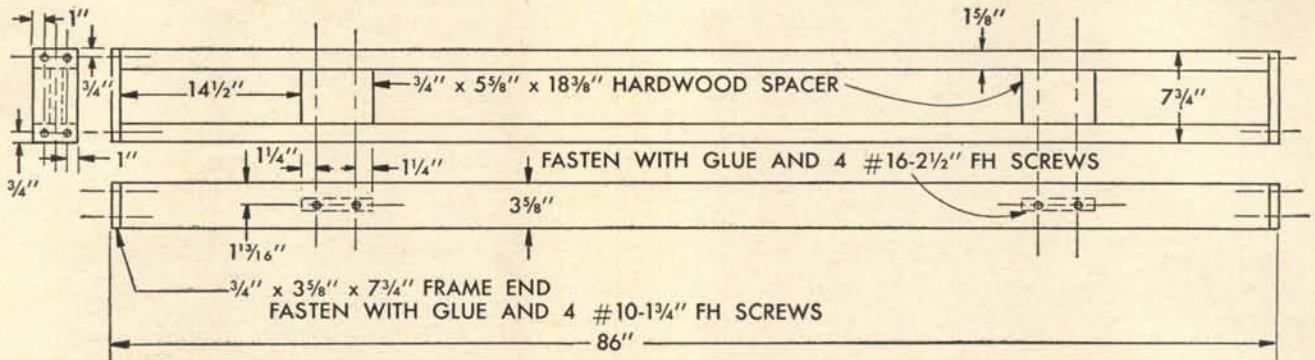
A suggested modification for the sofa would be to hinge the top of the center section so a storage space



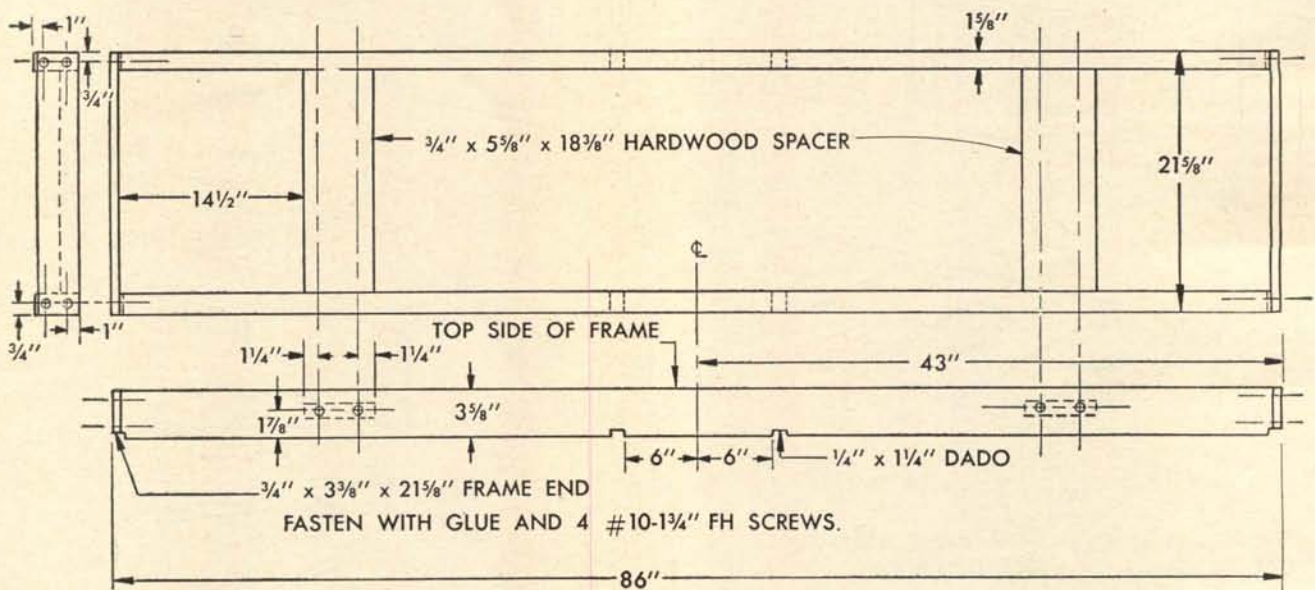


would be created. The front panel of the back part of the center section also could be hinged for the same purpose. Note that the latter panel is in two pieces; only the upper part would be hinged, and some fitting

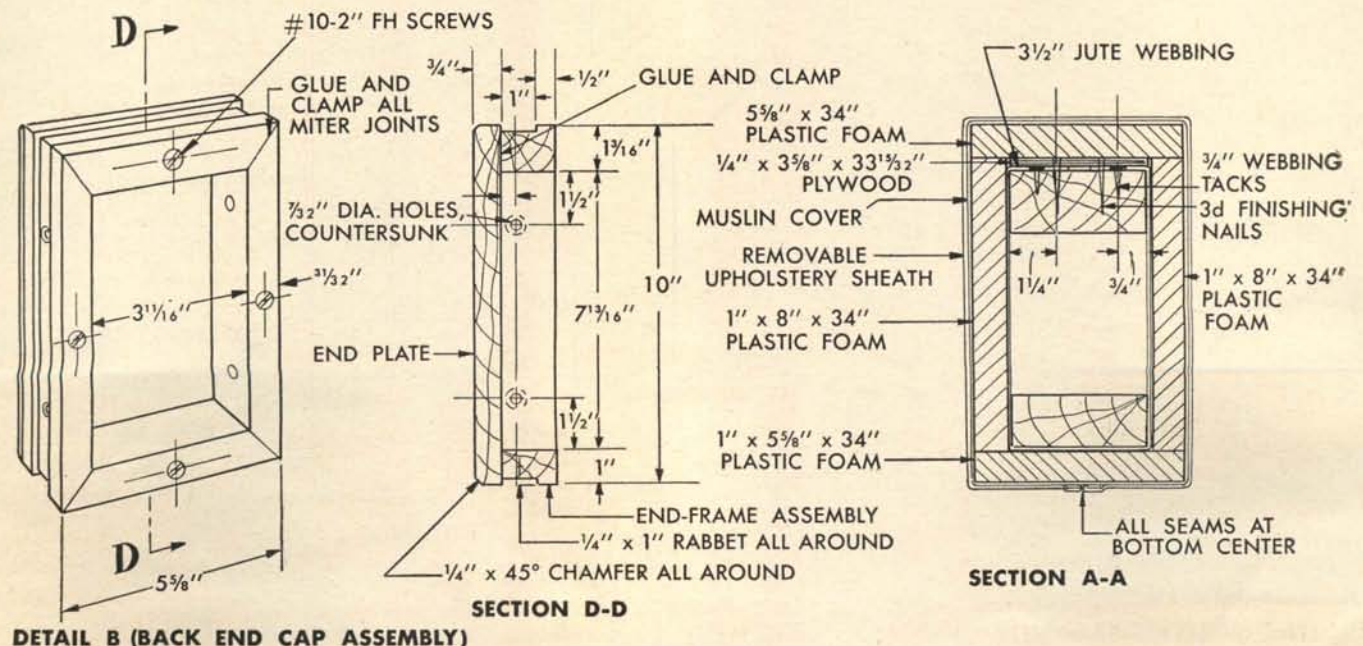
of the joint for the hinges would be required. To eliminate the need for knobs or pulls we suggest the use of "touch latches". These devices permit a door to be pushed to open, as well as pushed to close.  $\triangle \triangle$



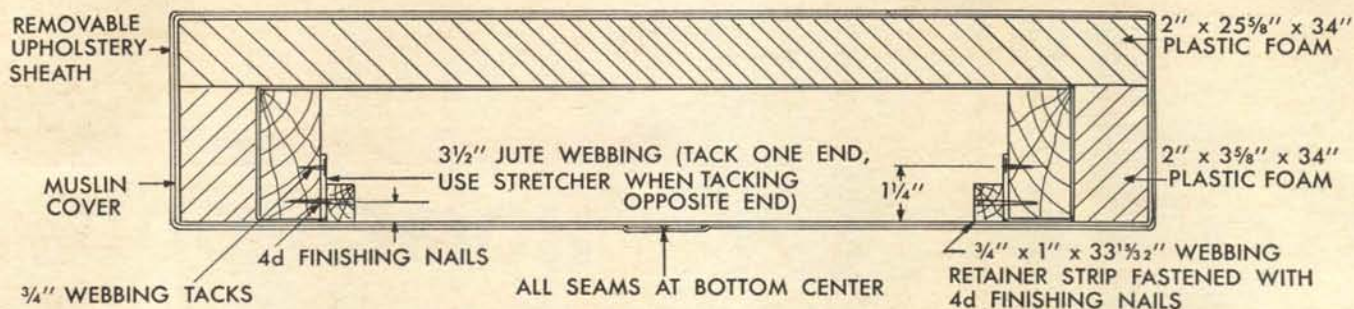
DETAIL A (BACK-FRAME ASSEMBLY)



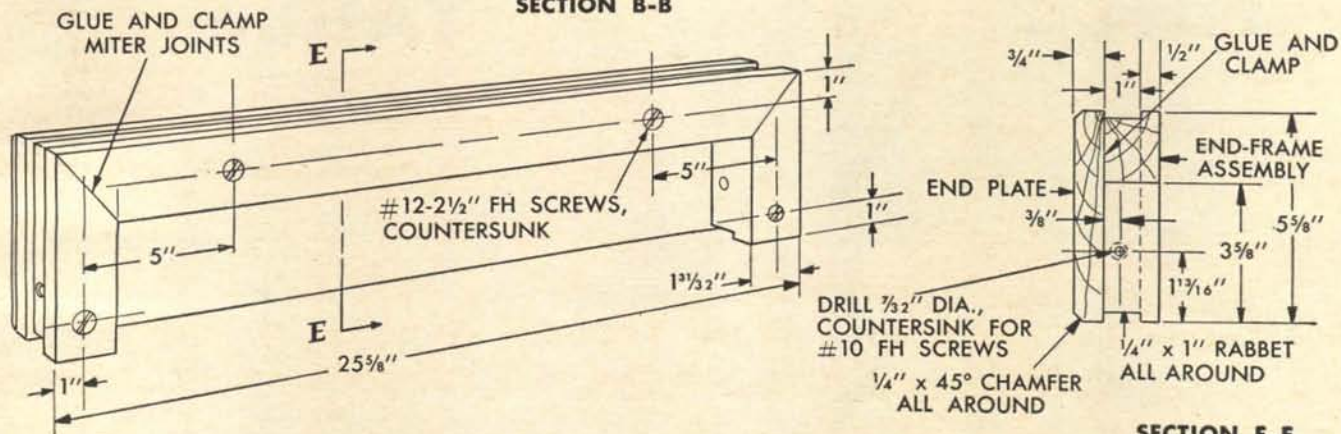
DETAIL D (SEAT-FRAME ASSEMBLY)





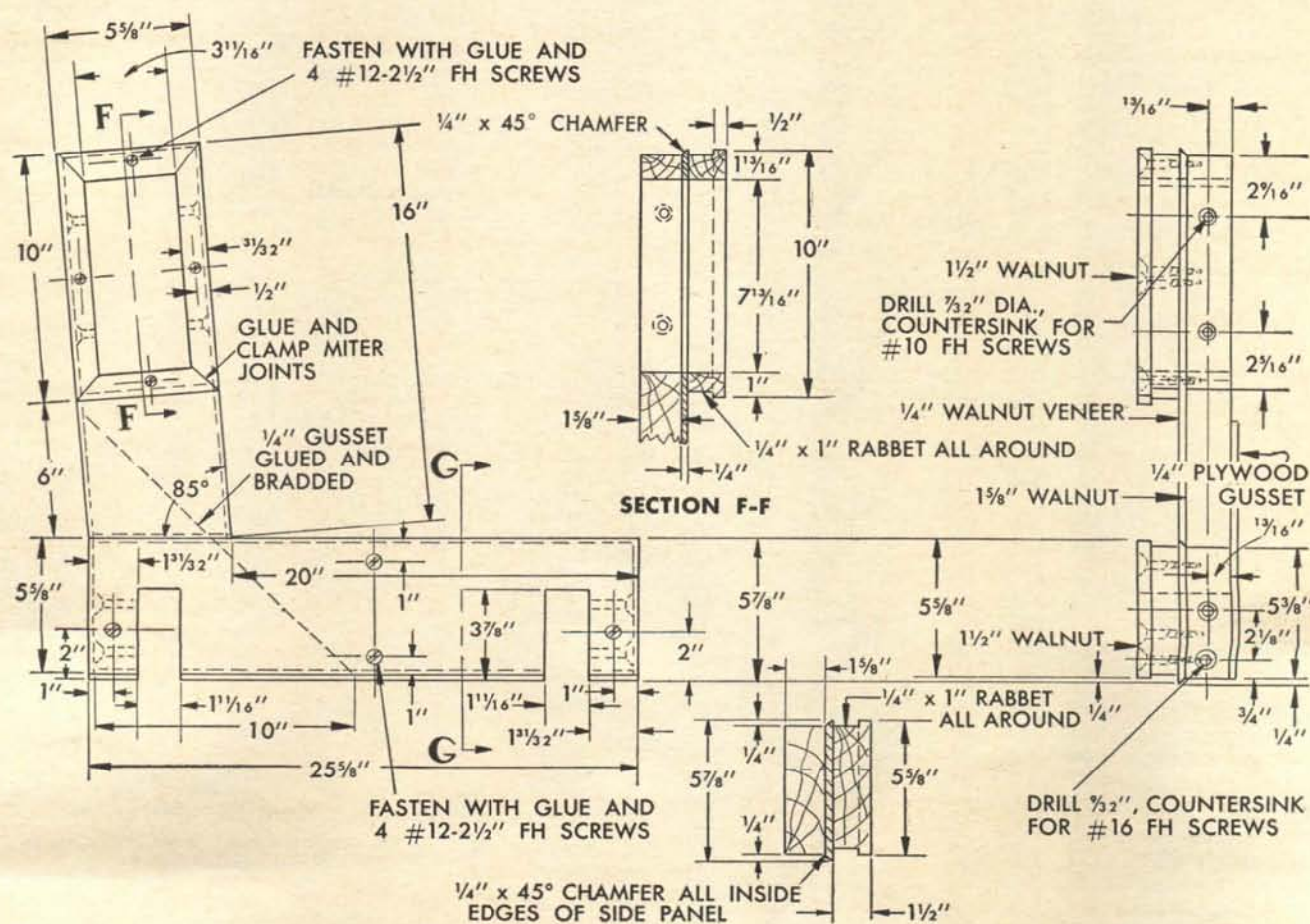


SECTION B-B



SECTION E-E

DETAIL C (SEAT END CAP ASSEMBLY)



SECTION G-G

DETAIL E (LEFT SIDE, CENTER-FRAME)





# HOME POOL TABLE

C. L. WIDDICOMBE

## PART II

At this stage of assembly the top of the pool table has been attached to the legs and the reinforcing strips are screwed to the underside of the top. In the event there is some question as to the positioning of the reinforcing strips, the detail in Fig. 1 should clarify this point. Note that

the edges of the strips are flush with the edges of the table. Be sure that the heads of all the 1½-in.-No. 10 flathead steel wood screws are slightly below the surface of the table top. This is to assure that the wood liner, to which the rubber cushion is attached, will fit flat and

tight to the top. Also note in Fig. 1 that the ends of the reinforcing cleats are positioned exactly 4¼ in. from the corner of the top. Locating the reinforcing strips this way will space them properly in relation to the side pockets, as shown in Fig. 3. If the spacing is not correct, the

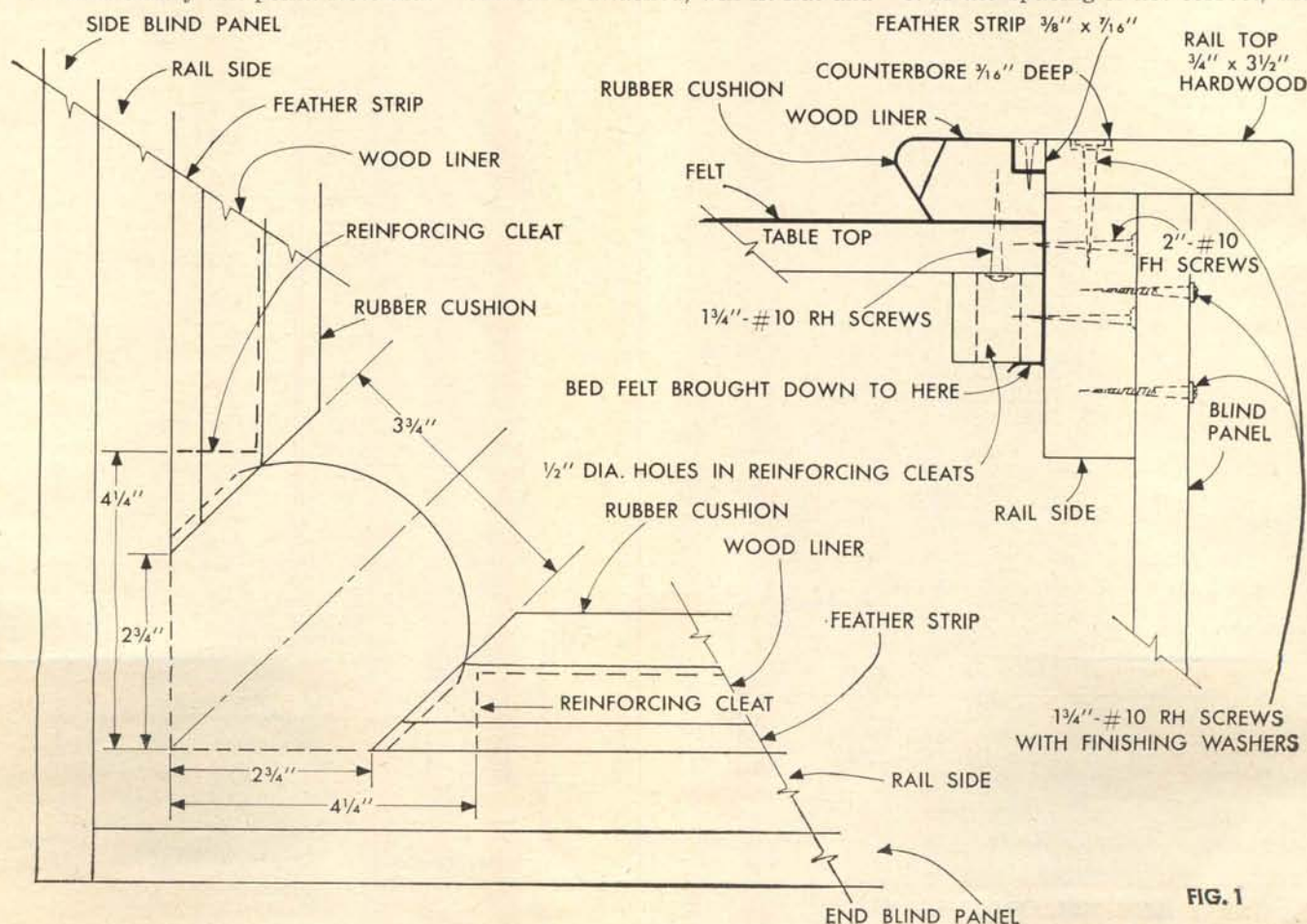
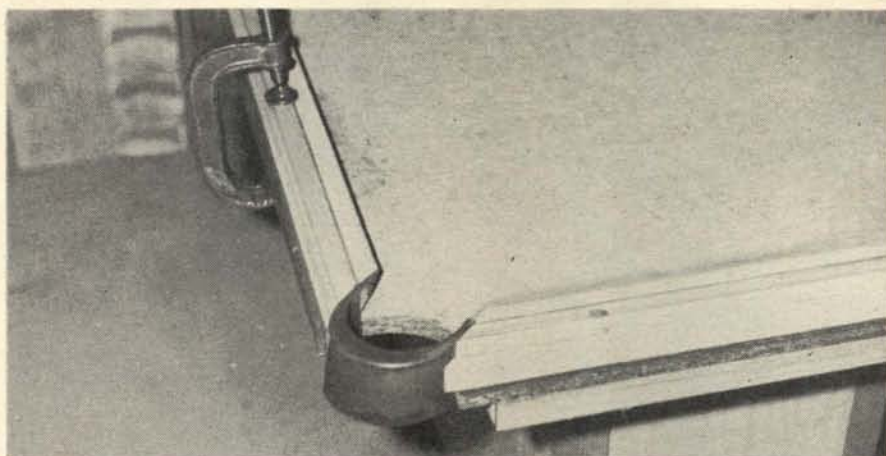


FIG. 1



strips must be cut to fit as shown.

The application of the felt to the top is the next step. Roll out the material on the table top and allow all wrinkles and creases caused by shipping or storage to flatten. In the case of the original, a moderately hot iron was used to press the felt. If you use an iron, make sure it does not get too hot, and use a good pad under the felt while doing the pressing. When all wrinkles have been removed pull one end of the felt down over the end of the table top and secure it with thumb-tacks pushed into the edge of the reinforcing cleat. This will hold it in place while you use more thumb-tacks to secure the edge of the felt to the underside of the reinforcing cleat, Fig. 4. Drive the tacks home with a hammer. At the opposite end of the table clamp the free end of the felt between two strips of wood, Fig. 7. Be sure the clamps are tight enough so the felt will not slip. Grasp the clamps, as in Fig. 7, and pull the felt down and around the end of the table. Maintain a reasonable tension on the felt, keeping it smooth and wrinkle-free, but do not pull so hard that the tacks at the other end of the table are

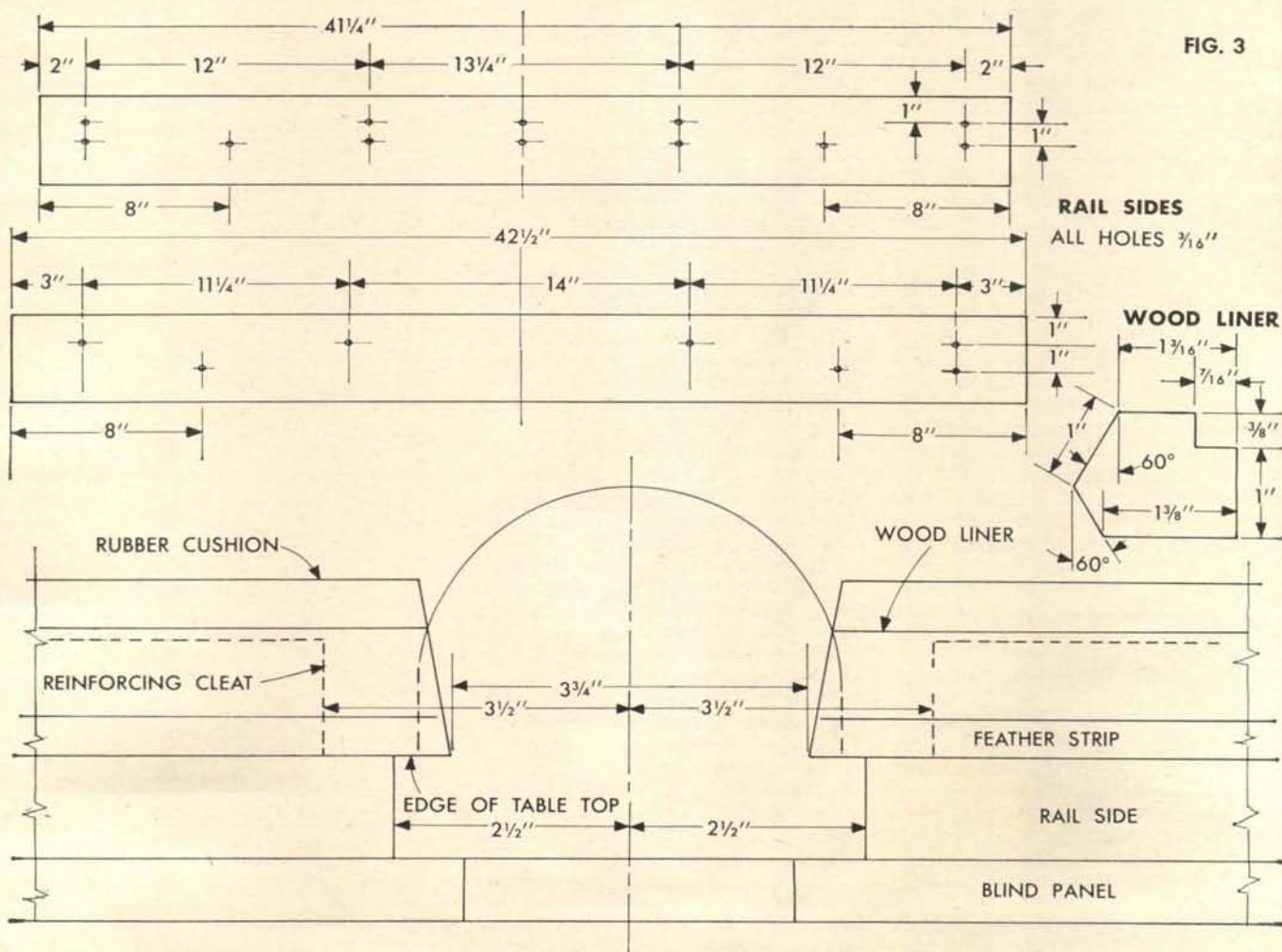


2. "Dry-fitted" assembly here shows relative positions of wood liners, table top, reinforcing cleats and plastic pocket liners before applying felt.

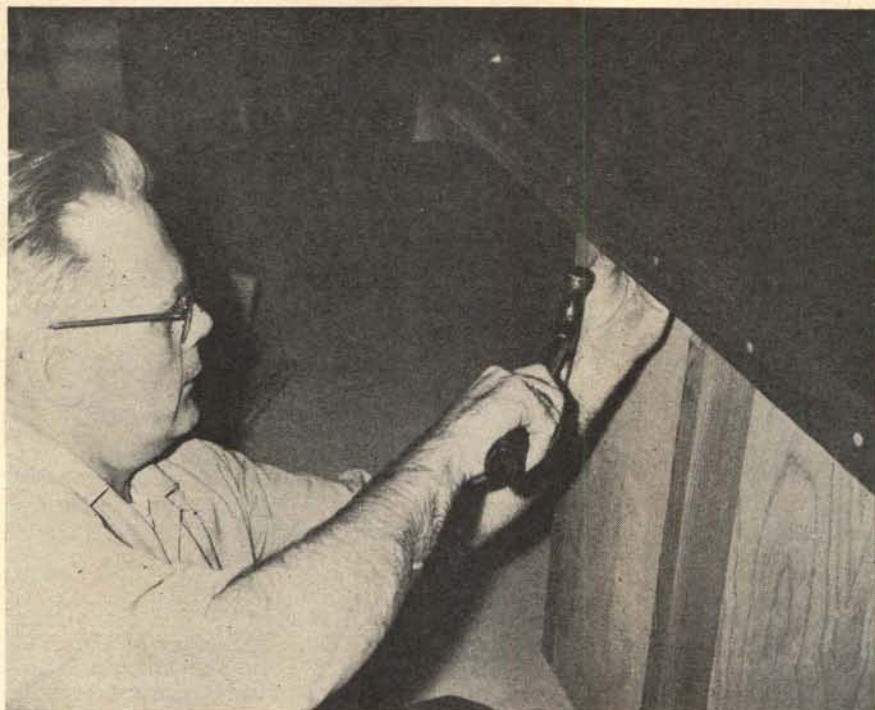
loosened. The weight of the clamps and wood strips should be enough to keep the felt taut when they are allowed to hang over the edge of the table top. Tack the felt to the edge of the reinforcing strip, as at the other end, then drive tacks through the felt into the underside of the reinforcing strip. The same

method is used to fasten the sides of the felt to the sides of the table top. Getting the felt smooth is important; playing on a table with wrinkled felt is aggravating and will take the pleasure out of the game.

When the felt has been applied and tacked all around, cut out for







the pockets, Fig. 8, making a series of wedge-shape cuts, notching to within about 1/16 in. from the edge of the pocket cutouts. Pull the resulting wedges of felt down and under the table top, tacking each wedge to the underside, Fig. 9.

Make the wood liner now, to which the rubber cushion is attached. Dimensions for the liner are in Fig. 3. We suggest you obtain the rubber cushion before making the liner. While all cushions are almost identical, there is a chance that a slight change of dimension would require the 1-in. dimension on the liner to be changed slightly. After the liners are made the next step is to cement on the rubber cushion. Some supply houses and manufacturers provide a powdered glue for this, but we used a contact adhesive instead. The powdered glue presents the possible problem of lumps in the mixed glue, and the required 24-hr. drying time would mean a delay of another day, if the strip had to be removed and reglued. Contact adhesive makes an immediate bond, and there is no fear of lumps in the glue, Fig. 10.

Cut the wood liners a little longer than the finished length, cement on the rubber cushion, then cut to the exact length. The two end liners have a 45-deg. angle at each end and are 42 5/8 in. long. The side liners, (4 req'd.), are 43 1/2 in. long and there is a 45-deg. angle on one end of each, and a 10-deg. angle on the other end. This requires the making of two pairs. The 10-deg. angle, of course, fits against the opening for the side pockets. Next, make the

"feather strips," the cross-section dimensions being given in Fig. 3. Fit and cut these strips to length after attaching them in the rabbet in the wood liners. Use countersunk flathead screws and countersink them enough so that the feather strips can be planed and sanded flush with the liners. Be careful not to gouge the rubber cushions. Now, remove the feather strips and attach felt to each wood liner. Start the felt at the bottom outside edge, holding it with 4-oz. tacks or 3/4-in. brads spaced about 2 in. apart. Wrap the felt around the rail, finishing in the rabbet for the feather strip. Pull the felt taut and reinstall the feather strips. Trim off excess felt with a razor blade flush to the edge of the wood liner and feather strip.

The assembly of cushion, liner, feather strip and felt now is clamped to the table top, each of the six units in the correct position. Clearance holes for 1 3/4-in.-No. 10 roundhead screws are drilled up through the table top, through the 1/2-in. holes in the reinforcing strips, and the liner-cushion assemblies are attached. Use flat washers under the screw heads.

In Fig. 3 are dimensioned the rail sides. These are cut to size, then screwed to the edges of the table top and reinforcing strips with 2-in.-No. 10 flathead steel screws. Note that the rail sides are 3/4 in. below the tops of the liners to allow for the rail tops.

The blind panels for the sides and ends, Fig. 5, are attached with 1 3/4-in.-No. 10 roundhead chrome-plated screws, and chrome-plated

4. Hold felt to top with thumbtacks in edges of cleats, then hammer thumbtacks into underside of cleats to finish.

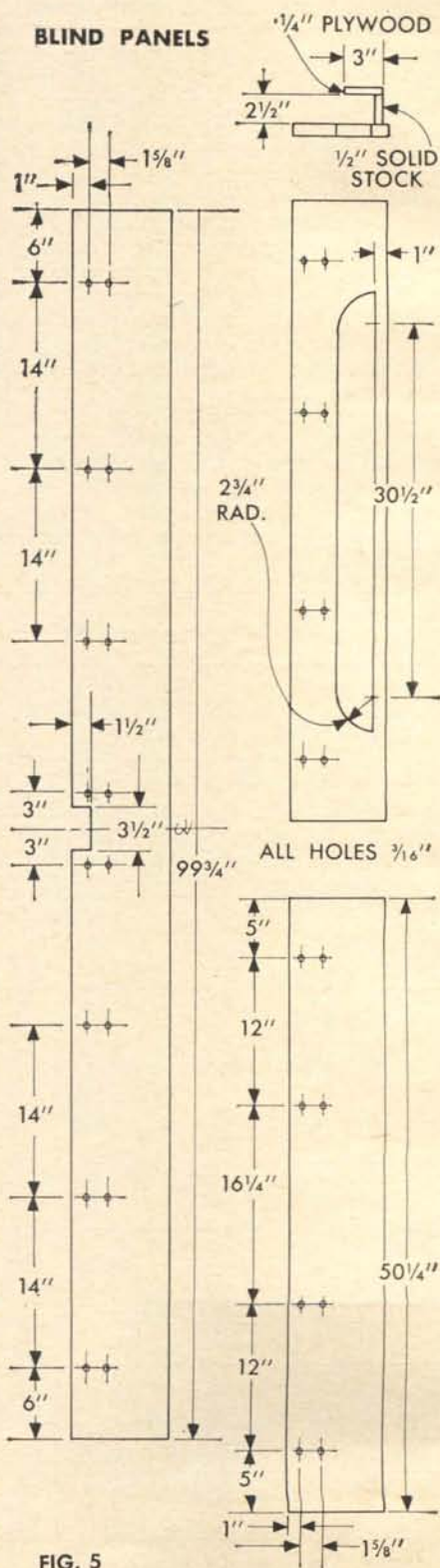


FIG. 5



## MATERIALS LIST

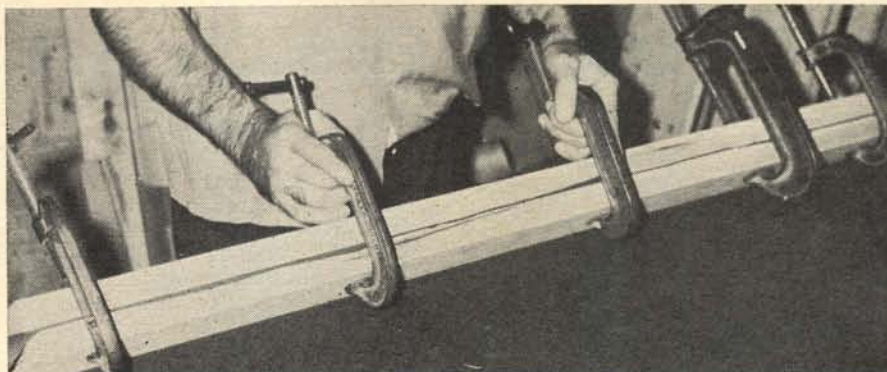
Rail Tops, 1" Stock  
Ends,  $3\frac{1}{2}" \times 55"$ , 2 req'd.  
Sides,  $3\frac{1}{2}" \times 103"$ , 2 req'd.

Rail Sides,  $1\frac{1}{8}"$  Stock  
Ends,  $3\frac{3}{4}" \times 42\frac{1}{2}"$ , 2 req'd.  
Sides,  $3\frac{3}{4}" \times 41\frac{1}{4}"$ , 4 req'd.

Blind Panels, 1" Stock  
Sides,  $8" \times 99\frac{3}{4}"$ , 2 req'd.  
Ends,  $8" \times 50\frac{1}{4}"$ , 2 req'd.

Wood Liners,  $1\frac{3}{8}" \times 1\frac{3}{4}"$  Stock  
48" long, 6 req'd.

Feather Strips,  $\frac{3}{8}" \times \frac{1}{16}"$  Stock  
48" long, 6 req'd.



7. Clamp free end of felt for table top between wood strips, pull on clamps to keep felt taut while tacking to table.

finishing washers. If necessary, plane and sand the upper edges of the blind panels so they are flush with the tops of the rail sides. The notch at the center of each side panel later is covered with a hardwood-plywood plate, attached with the chrome-plated screws and washers. The notch in the panels allows full use of the side pocket.

Rail tops, Fig. 6, are mitered 45 deg. at the ends, then radiused to accommodate the plastic pocket inserts. These inserts, and other special materials, are available from sources listed in Part I. Use bar clamps across the table to pull the rail tops against the liners. The end rail tops are pulled in place by using clamps fitted across the bar clamps and over the outside edges of the rail tops.

A ball trough for storage of the balls is located in one end of the table inside the blind panel, Fig. 5. While the opening in the blind panel remains the same, the inner por-



8. Cut tacked felt at location of pockets, making wedge-shape cut to within about  $\frac{1}{16}$  in. of top of the table.

tion of the trough is made and dimensioned differently if a gully ball return is used. A gully return system, as well as single pockets, will be described in Part III in the next issue.

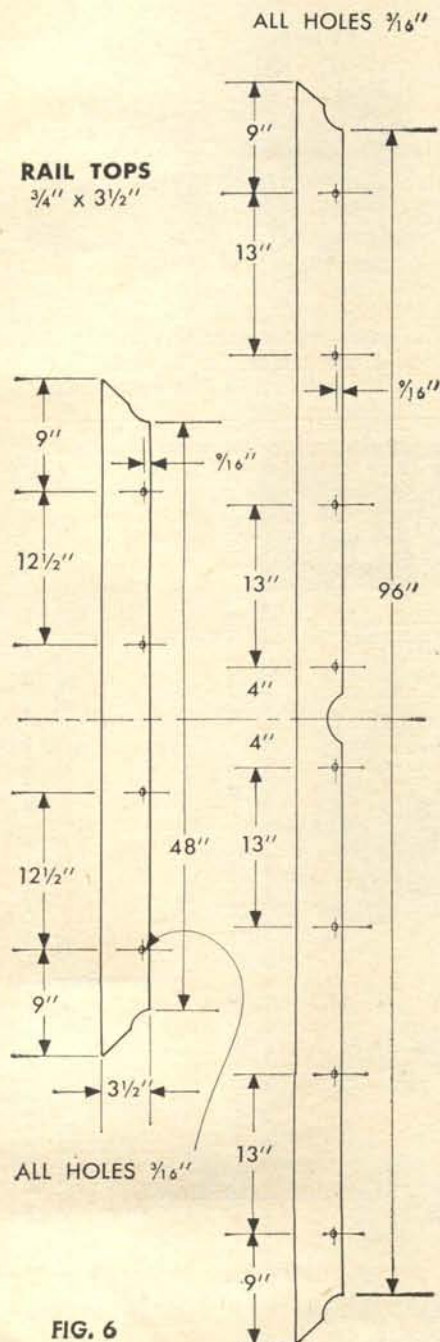
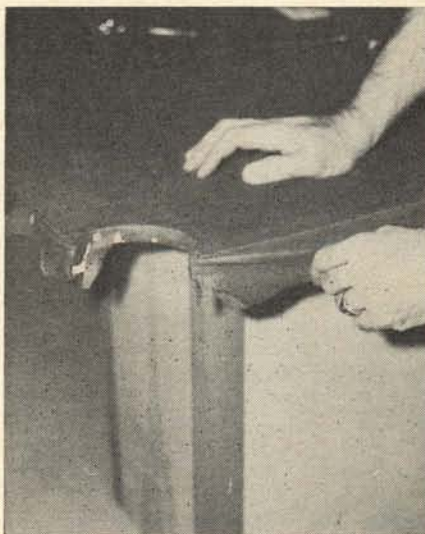


FIG. 6



9. Pull felt wedges down under the table top and tack firmly. Felt at edges of hole is pulled back, folded, tacked.



10. Simplest and quickest method of attaching rubber cushions to wood liners is by the use of contact adhesive.



# SOLAR CONVERSION KIT



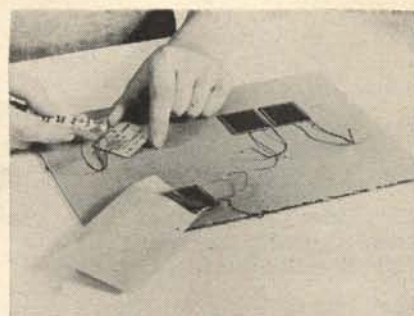
High-intensity photographic lamp supplies light here, but sun is better, less expensive source.

The use of solar power may be in the future, but there is a simple way to experiment with this fascinating energy now. Selenium solar cells connected in series will produce enough electric energy to drive small motors, transistor radios and the like. An easy-to-assemble kit is available that includes the selenium cells that are

cemented to a base of some type, then wired together with soldered joints. When the cells are exposed to light from the sun or other source they will produce enough electricity to drive a small motor also provided in the kit. Kit is just \$8.95 from Edmund Scientific, Barrington, N. J.  $\Delta$   $\Delta$



Kit contains four selenium cells, electric motor, oscillating disk and complete, detailed instructions.

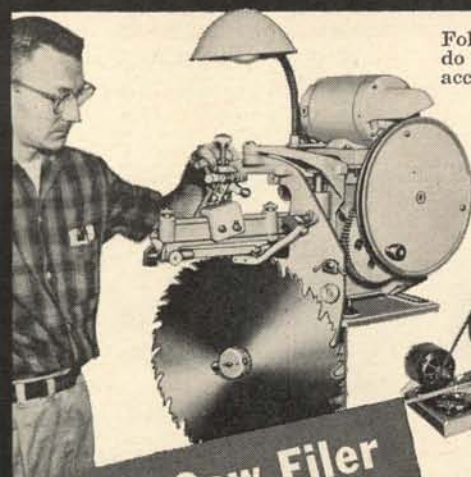


First step in assembling solar converter is to cement cells to wood or cardboard base with leads all same way.



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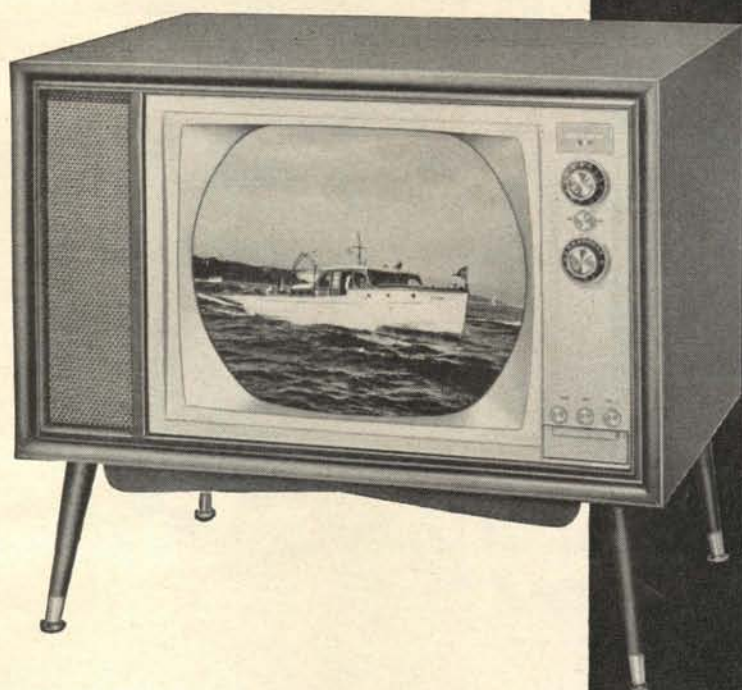
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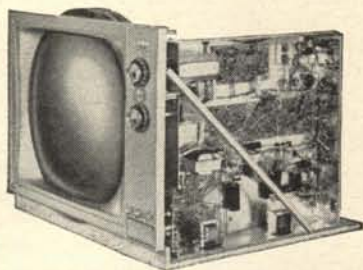




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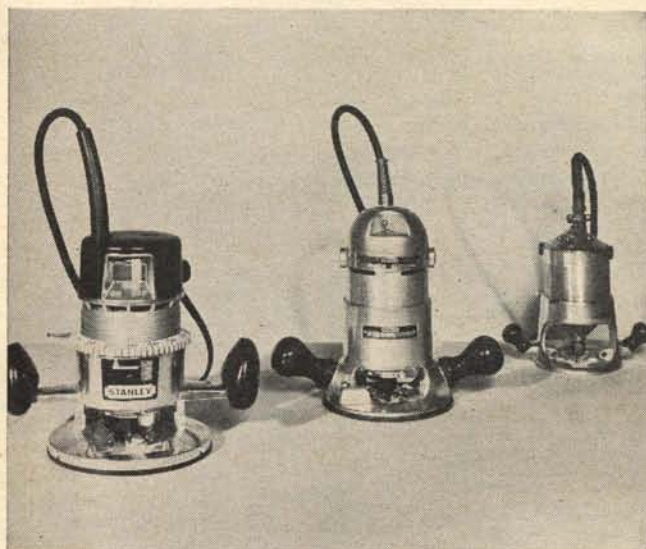
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# FIRST PORTABLE ROUTER



During World War I when 16 patterns were returned to his shop because a specified radius had not been cut on them, patternmaker R. L. Carter invented the portable router. Instead of having seven men work three days with hand tools to do the job, Carter used a tool that was the motor from an electric hair clipper to rotate a tool bit ground from a worm gear. Two bevel plates permitted keeping the tool accurately aligned. Carter and his nephew, Junius Yates, (later with the Stanley Electric Tool Co.), finished the 16 patterns in two hours.

The portable shaper was not used again for about a year and a half. Yates stopped at a cabinetmaker's shop and watched him carving the ornate frame used for the back of a sofa. He went back to the pattern shop, picked up the portable shaper and demonstrated to the cabinetmaker how quickly he could carve with power. The cabinetmaker wanted to buy the tool immediately. When Yates reported the reaction to his uncle, Carter determined to use the tool more extensively in his patternmaking.

Shortly afterward Carter sold the pattern shop and spent full time improving the shaper, devising an end shield that would extend the versatility of the tool. The tools sold as fast as they were made. Carter and Yates were able to make 15 of the tools a week in Carter's garage, but when orders reached 750, they enlarged the shop and hired more men. When a railroad needed to install larger hinges on the doors of some train cars, Carter fitted a base to his shaper and installed a chuck to hold router bits with 1/4-in. shanks. The mortises for the hinges were cut quickly. The tool at this stage was basically the portable router we know today. Motor and housing were threaded for quick and accurate adjustment of depth of cut; the same method is used today. By 1929 when the Stanley Co. acquired Carter's business, the portable router was well-known to woodworkers in all fields.

And it all came about because an inventive patternmaker wanted to correct an error quickly and accurately. △ △





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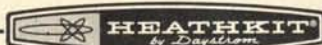
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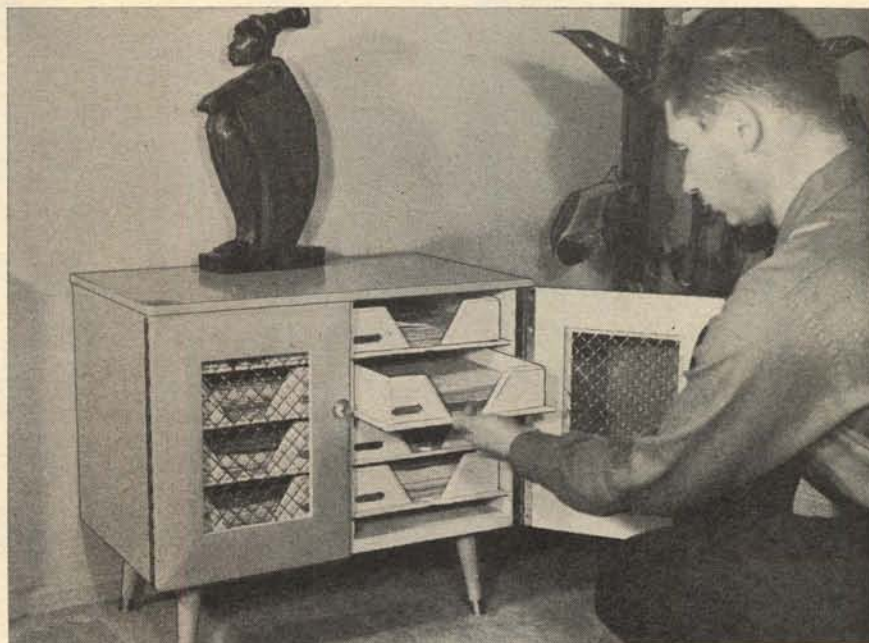
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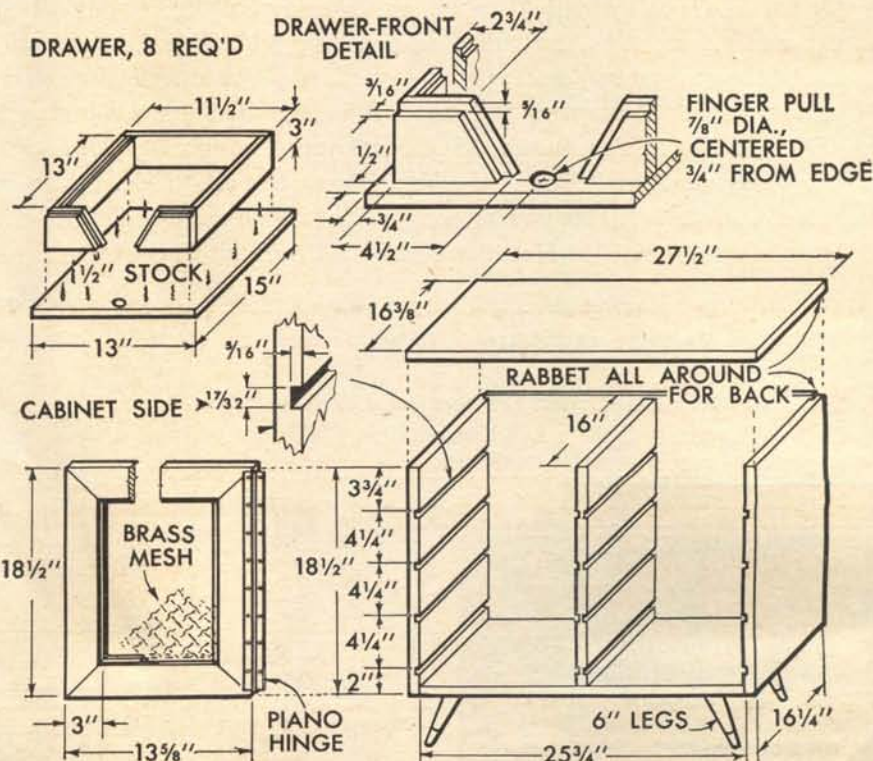
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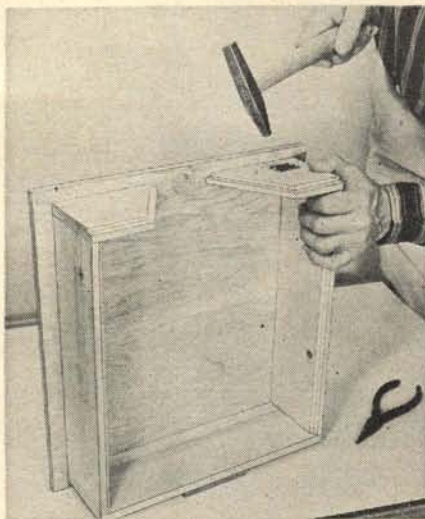




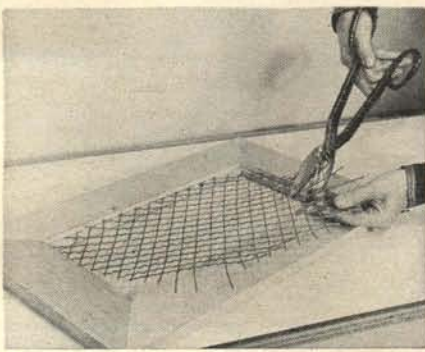
fied for quick selection.

The main cabinet is  $\frac{3}{4}$ -in. hard-wood plywood. Note that while the two cabinet sides are the same dimension, the center partition is  $\frac{3}{4}$  in. shorter in length because it fits on top of the cabinet bottom, and also  $\frac{1}{4}$  in. shorter front-to-back because of the  $\frac{1}{4}$ -in. back material. When cutting dadoes for the trays, keep that fact in mind and start marking and cutting the three vertical members from the top to keep them aligned. The dadoes may be spaced to accommodate trays of any desired height; the trays in this unit are  $3\frac{1}{2}$  in. high.

The trays are assembled with simple butt joints, the sides, front and back being glued and screwed to the bottom, nails being driven through the corner joints. The drawer front is two pieces, as indicated. The upper edges of the sides and front, and the angled sides of the front, can be beveled or rabbeted for better appearance. Brass mesh is stapled to a  $\frac{3}{8}$  x  $\frac{3}{8}$ -in. rabbet, then strips are nailed in the rabbets to cover the wire.  $\Delta \Delta$



Brass identification plates are nailed to tray fronts. Note how tray bottom extends so the edges fit partition grooves.



Decorative metal mesh is cut to fit rabbet in door frame, ends of cut mesh then are covered with thin wooden strips.

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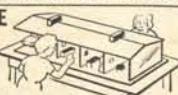
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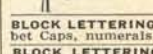
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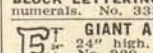
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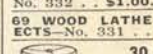
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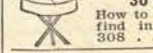
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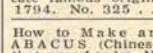
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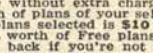
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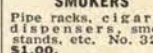
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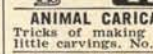
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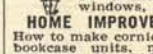
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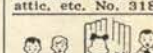
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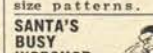
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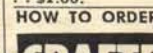
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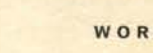
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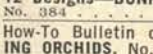


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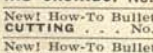
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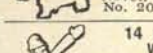


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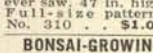
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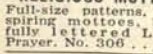
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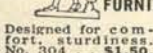
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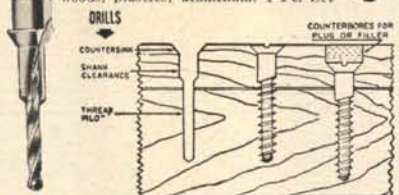
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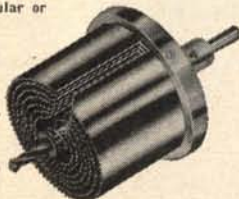


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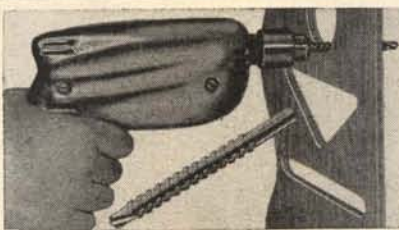
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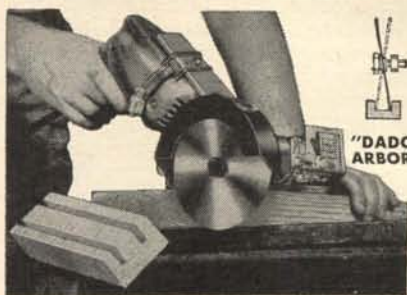


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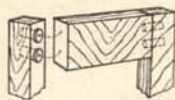
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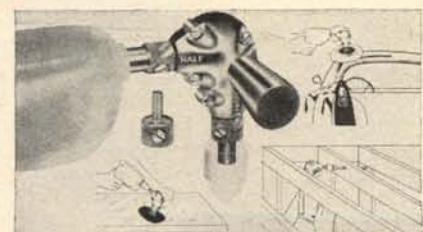
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## Book and Booklet Reviews

### HAND WOODWORKING TOOLS PORTABLE POWER TOOLS

Both By Leo P. McDonnell  
Delmar Publishers, Inc., Mountainview Ave.,  
Albany, New York

Hand Tools, \$6, Power Tools \$5.60. These two books are unique in that step-by-step "how to" instructions follow the basic description of each tool. The illustration of the tool appears on the same page where it is discussed. Safety precautions are emphasized where they must be observed. Newly-introduced tools, such as powder-actuated drivers and reciprocating power saws are covered in detail. Journeymen carpenters, as well as home craftsmen will find these two volumes excellent as references for all types of woodworking tools and operations.

### 1001 USES OF FILIGREE PANELS

Panelboard Mfg. Co., Inc.,  
222 Pacific St., Newark 14, N. J.  
Free on request.

This interesting booklet features photos of exquisite room settings showing silicone-impregnated hard-board filigree in room dividers, folding screens, bifold doors and many other furnishings and built-ins. Also highlighted in the booklet are various moldings and hardware accessories designed to help do-it-yourselfers create a wide variety of home projects.

### HANDBOOK OF KNOTS AND SPLICES

By Charles E. Gibson  
Emerson Books, Inc.  
251 W. 19th St., New York. \$2.95

Rope is a common, everyday item, but how many of us have ever spliced an eye in a line, spliced one length of rope to another, or even know how to tie the correct knot for a specific job? This book handles these subjects in a concise, step-by-step manner, goes on to show how rope can be used for beauty. Mats can be plaited from rope, columns can be decorated with a Turk's head, a pineapple knot or a herring-bone weave. An excellent reference if rope is used in your work or recreation, or if you are seeking an unusual and interesting hobby.

### IN THE NEXT ISSUE . . .

Built-In Dining Room  
Contemporary Club Chair  
Propane Torches  
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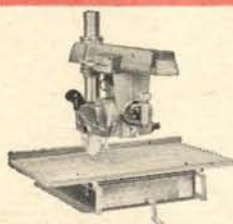


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# FM Antennas



The correct type of antenna is required if you want to get really good reception on an FM receiver, and if you are trying for stereo multiplex reception, a proper antenna is an absolute must. While FM antennas come in many forms they are divided into two basic groups, the folded dipole and the beam, or yagi, type. The folded dipole, Fig. 2, is a single-element antenna that has a bi-directional pickup pattern as indicated in Fig. 1. This type antenna is adequate in metropolitan areas where the distance to the desired broadcasting station is only a few miles, and the signal strength is quite high. A homemade folded dipole antenna can be made from ordinary TV twin-lead-in wire, as indicated in Fig. 3. Cut a 40-in. length of the 300-ohm lead-in wire and strip the

insulation about ⅜ in. from each end. Twist together the bare wires and solder them, as indicated. For appearance, you can tape the soldered connections with plastic electrician's tape. At the center of the length of wire cut one conductor only, and strip ⅜ in. of the in-

*Continued on Page 44*

FIG. 2

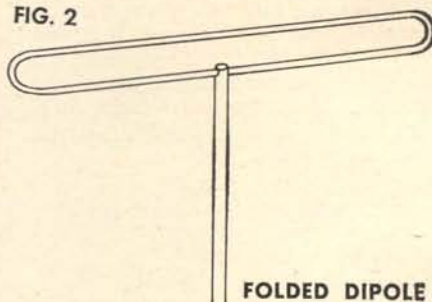
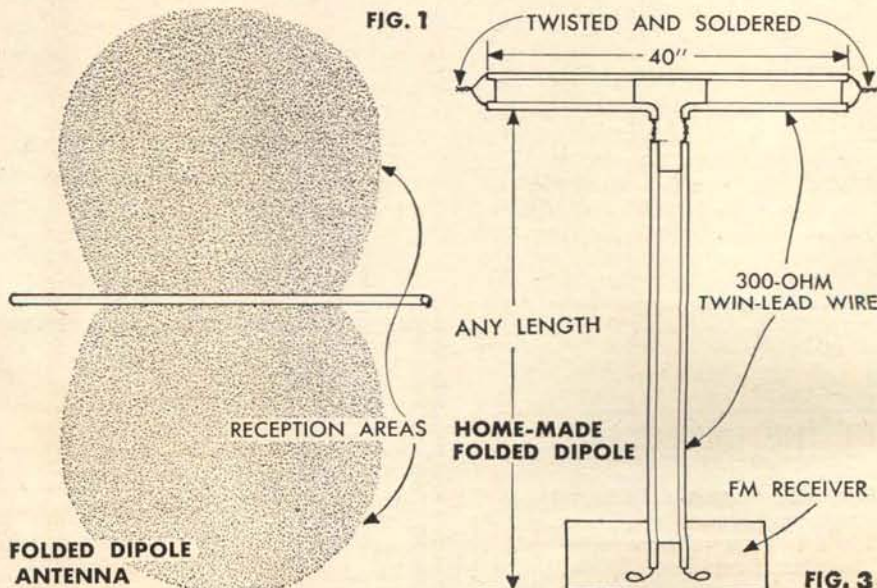


FIG. 1







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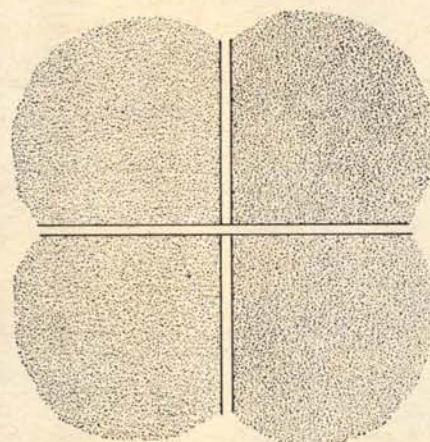


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sulation from the resulting two wire ends. Determine the distance from the location of the FM receiver to the location of the antenna and cut another piece of 300-ohm wire this length. (An ideal location for this antenna is under a carpet near the FM receiver. Turn the "antenna" so it is at right angles to the direction of the station you wish to receive.) Connect the length of wire to the improvised antenna by twisting together the wires and soldering them. Tape the connections also. Strip the in-

SHADED AREA IS  
RECEPTION ZONE



TURNSTILE ANTENNA

sulation from the ends of the leads reaching the FM receiver and connect the two wires to the antenna leads on the receiver. Make sure the two wires do not touch each other to "short" out.

If you live in a suburban area a folded dipole may not be adequate and a turnstile-type antenna may be required, Figs. 4 and 5. This is a variation of the folded dipole, but because of its construction it has an omnidirectional receiving pattern, as shown in Fig. 4. This feature allows it to receive from any direction with equal efficiency. Turnstile antennas may be located in the attic or on the roof, no direction-positioning being required.

The beam, or yagi, type antenna,

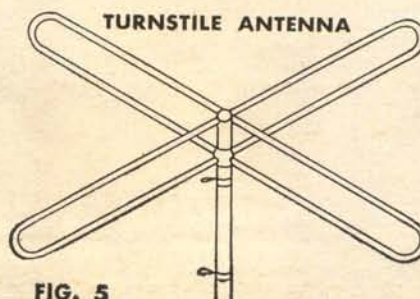
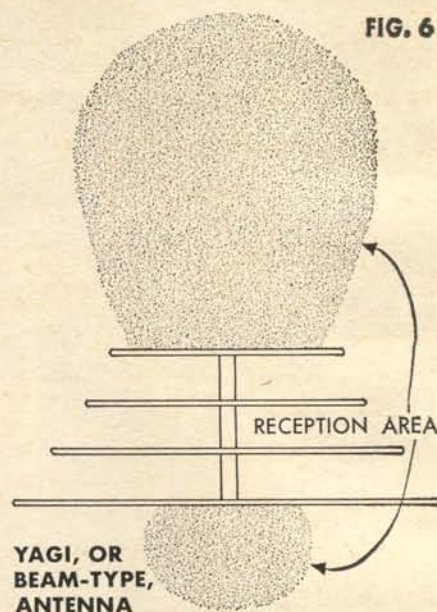


FIG. 5



YAGI, OR  
BEAM-TYPE,  
ANTENNA

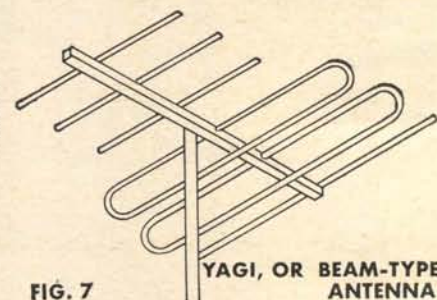


FIG. 7

YAGI, OR  
BEAM-TYPE,  
ANTENNA

Fig. 7, is best for reception in areas more distant from the broadcasting stations. It should be located on the roof, as high as is reasonably practical. A beam-type antenna is extremely directional and must be aimed directly at the station to be received. Generally, the more elements a beam antenna has, the more efficient it is. As shown in Fig. 6, the beam antenna has a small lobe of reception at the rear, with a large reception lobe at the front. If a close station is desired, position the antenna so the small lobe is aimed at the nearby station, and the large lobe at the distant station.

There have been some interesting innovations in FM antennas, one of which we tested. The Gallo FM antenna system, Model FMS-101, shown in the lead photo, was tested in a metropolitan area. We had excellent results in receiving stations as distant as 65 miles, using a relatively insensitive receiver. The FMS-101 is unique in that it is about the size of a small transistor radio or book, comes in an attractive black or beige case and can even be slipped onto a bookshelf. For more information: Gallo Electronics Corp., 12 Potter Ave., New Rochelle, N. Y.  $\Delta$   $\Delta$

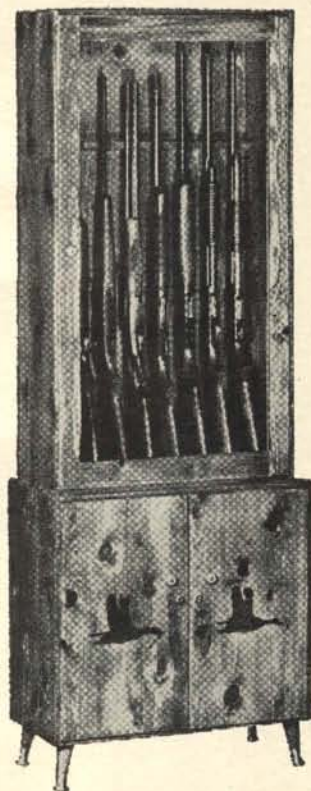




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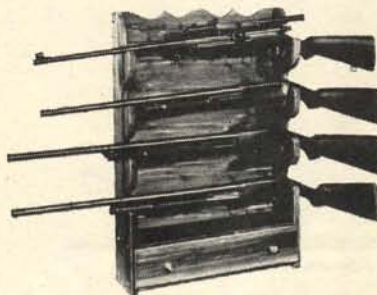
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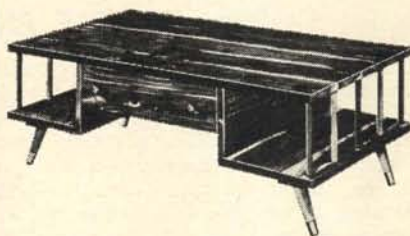
#### **GUN CABINET No. 707**

The knotty pine "Pioneer" gun cabinet holds eight guns. Bottom storage compartments for ammunition and other equipment equipped with two locks. Brass ferrules on legs. Overall size 27" wide, 15½" deep, 83" high. Glass for door not included.



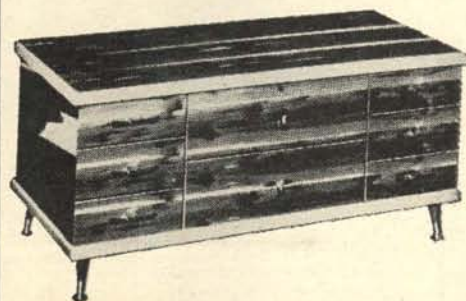
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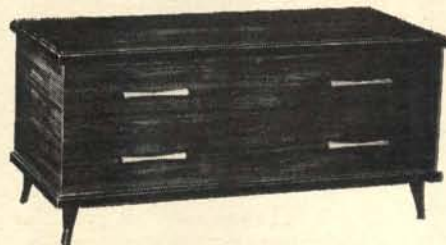
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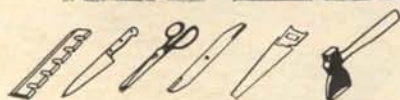
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## WORKBENCH

# Women's Page



## Doll-House Furniture ESTELLE ANSLEY WORRELL

Authentically styled after considerable research, this furniture is constructed from ordinary material such as fabric, plastic foam, balsa wood and cardboard using a knife, scissors and razor blade. Scaled to fit the doll house in the cover story, the furniture can be mixed with purchased furniture, and will be as long-lasting as the factory-made items. We found that some of the furniture in antique doll houses was made from silk and pasteboard. Sets of full-size plans can be purchased; see classified section.

### Biedermeier Table

Cut 10 leg pieces, two apron pieces from cardboard. Glue and press leg pieces, making two legs of five plies each. Glue legs to 2 x 2-in. square of rigid foam plastic, (Styrofoam), and glue square of cardboard, sheet plastic or balsa wood to top for finished surface. Glue the two apron pieces to the sides of the top between the two legs, as shown in the sketch. The stretcher between the legs is a length of square balsa strip, or the stem of a wooden match. The latter should be the smaller safety matches, rather than the larger,

so-called "kitchen" matches that can be lighted by striking on any surface. Sand all edges, dust, then apply gloss enamel. Can be "antiqued" in the same manner as full-size furniture.

### Square End Table

This table requires a 3 x 3-in. square of ½-in. Styrofoam on which is glued cardboard, vinyl or balsa wood. The pedestal is two small spools, under which a disk of cardboard or balsa wood is fitted to form a base. Apron is cardboard.

### Coffee Table

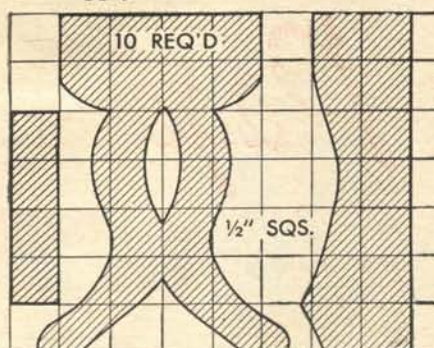
Top of this table is 3 x 6-in. piece of ½-in. Styrofoam. Cover as for end table. For legs use 2-in. lengths of dowels or pencils. Clothespins also can be used. Cut the apron from cardboard, glue it on. Finished table is painted with gloss enamel.

### Empire Chair

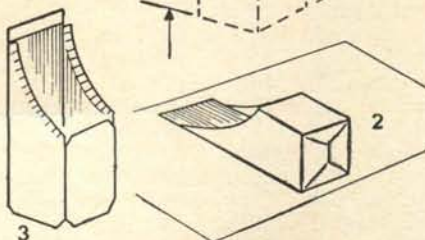
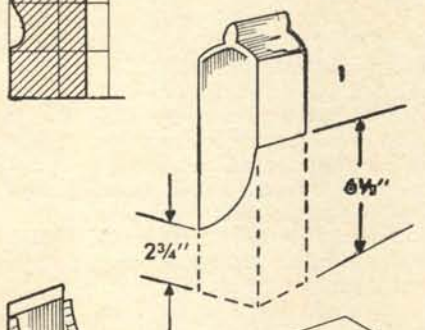
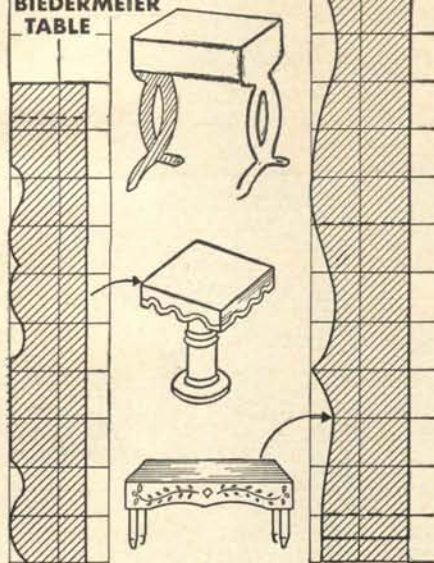
Basic material for the chair is a 1-qt. milk carton. A pattern can be made, using the dimensions given, or the chair can be marked directly on the carton if only one is to be made. Cover back of chair with white glue and place on



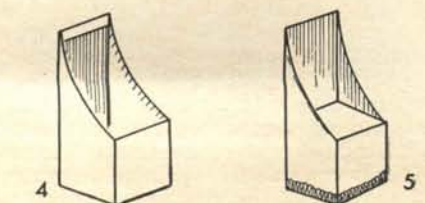
7½ x 12-in. piece of upholstery fabric. Cover sides with glue, then wrap fabric around; glue front and apply material. Notch edges



BIEDERMEIER  
TABLE



EMPIRE CHAIR



the TACKING TIPSTER

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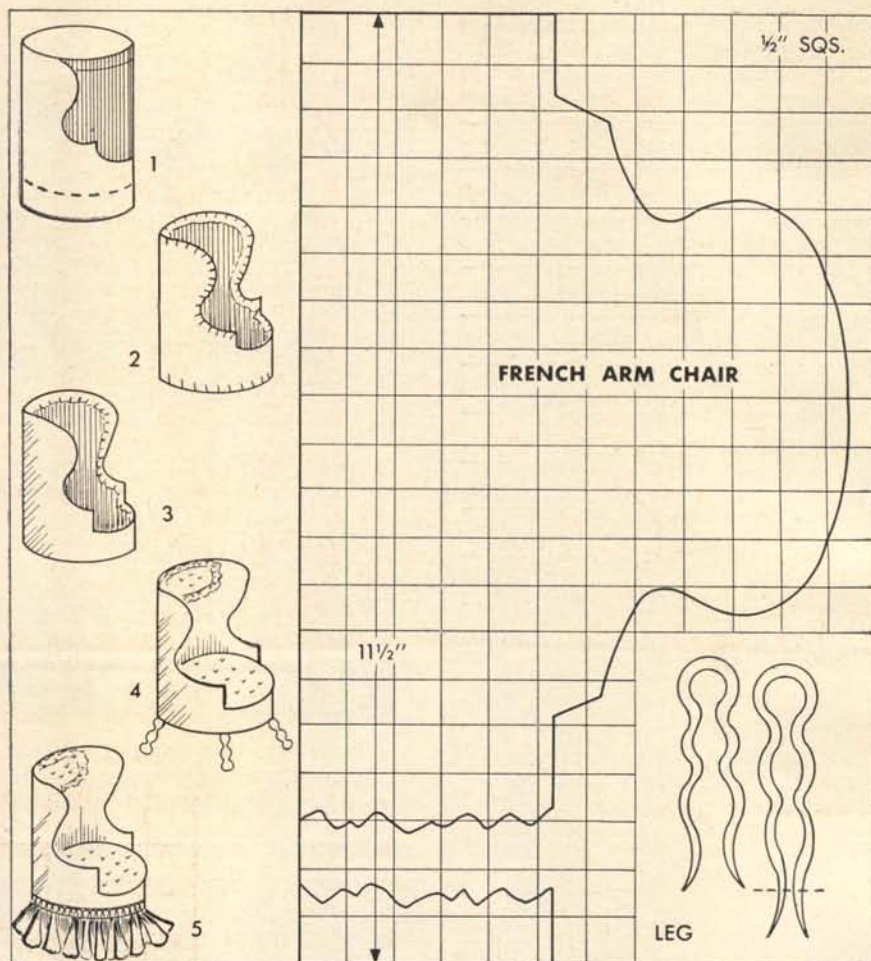
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of material on curves, after trimming material so  $\frac{1}{2}$ -in. extra is left all around, top and bottom. Fold  $\frac{1}{2}$ -in. strip over edge and glue. Repeat this upholstering job, which makes chair rigid. Apply glue and upholstery material to inside of chair. Cut carboard or Styrofoam  $2\frac{3}{4}$  in. sq., pad and upholster. Stuff chair with newspaper, glue in seat, add braid trim.

### French Armchair

Make full-size pattern from squared drawing. Wrap around salt box and draw outline on box. Cut out with knife or razor blade. Cut upholstery material about  $7 \times 12$  in. Hold chair inside and apply white glue all around sides. Wrap material around chair and glue it where it overlaps. Trim cloth to about  $\frac{1}{2}$  in. along edges. Notch cloth and glue  $\frac{1}{2}$ -in. strip over edges as indicated. Cut upholstery for chair inside, using outside pattern. Glue in place. Cut seat  $3\frac{1}{8}$  in. diameter. Pad and cover. To make "tufts," pull thread through seat, wrap over toothpick or match stick to prevent pulling through. Glue seat in place. Clothespins or heavy hairpins are used for legs. If flounce is used, make it  $3\frac{3}{4} \times 20$  in. to allow  $\frac{1}{2}$ -in. hem at bottom,  $\frac{1}{4}$ -in. hem at gath-

ering line. Flounce can be trimmed with braid or left plain.

### Beds

Various styles of beds are shown. Base is  $6 \times 12$  in., can be cigar box or Styrofoam. No. 1 has gold-painted pencils for post, topped with small Styrofoam balls. No. 2 has top and box covered separately with cotton percale, then glued together. Headboard has glass-headed push pins for decoration. To cover box, paint with glue, then put on fabric as though "wrapping a present."

No. 3 has  $\frac{1}{8}$ -in. dowels for posts, canopy is 1-in. Styrofoam "upholstered" with muslin. Beads pinned on for decoration. Spread matches canopy, attached curtains are sheer nylon. No. 4 is Styrofoam, bed being 1-in., the headboard  $\frac{1}{2}$ -in. stock. Beads are used for legs. No. 5 is same as No. 4, except straight top of headboard is boxed in, canopy of sheer fabric added.

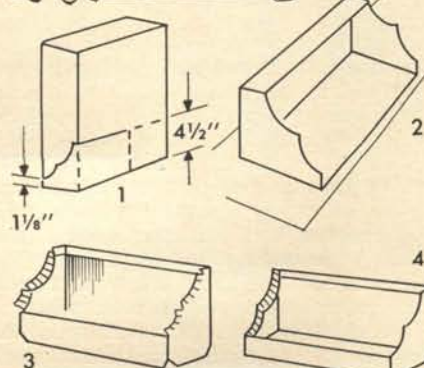
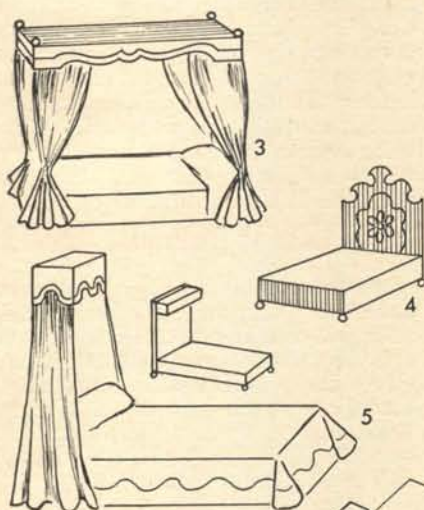
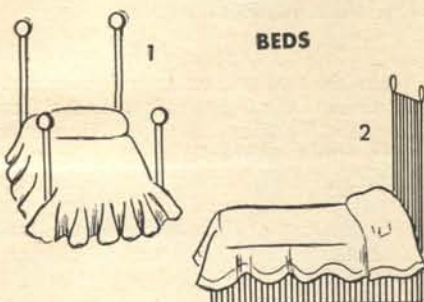
### Louis XVI Couch

Large-size soap or detergent box is used for this couch. Make pattern to dimensions given, making pleasing curves for sides. Place on box, mark and cut it out. Apply two layers of upholstery to provide



needed strength, as with Empire Chair. First layer is muslin or old cloth, top layer is finished upholstery. Cloth is about 5½ x 27 in., apply it in the same manner as on the Empire Chair. Use 1-in. Styrofoam for seat, and pad and upholster it before gluing in place. Disassemble wooden spring-type clothespins, cut off at spring notch. Use four of these, (two pins), for legs; slant back legs so couch tips back slightly. Trim couch with braid.

As with other doll furniture, the pattern for the couch can be adapted to cardboard, Styrofoam or light plywood, rather than using cartons or other containers. △ △



LOUIS XVI COUCH



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## WORKBENCH

# Research Department

Each issue in this column we will choose questions on home and shop subjects from letters sent to us. Only those questions which have wide appeal will be answered here. Questions on specialized subjects will be answered by individual letter from the Research Editor's Desk.

We would like to put a damper in our fireplace—which is about 100 years old—so we can use it. At present, all the heat in the room is drawn up the chimney. We have been told that the chimney would have to be torn down, as well as the fireplace, and a metal form installed and the fireplace rebuilt around it.

Mrs. C. S. L., Vermont



We would not attempt to install a damper or liner in an old fireplace. Much of the brickwork at the throat would have to be taken out to make the installation. It would be much easier to place an ornamental fire screen in front of the fireplace when it is not used. In rebuilding an old fireplace, a time-consuming and expensive job, there is always the risk of ending up with a smoking throat. If the fireplace does not give trouble with smoking, or puffing, then we would let well enough alone.

Use a stethoscope to check motors, bearings, etc. Where can I buy an inexpensive, but good unit for home use? Those sold for toys are poorly made and not efficient.

Mr. L. H. R., Madison, Wis.

You can buy a highly sensitive stethoscope, originally made for professional use, from Edmund Scientific Co., Barrington, N. J. Price is \$6.95 postpaid.

Where can you purchase aluminum wheels suitable for the construction of a 3-wheel bandsaw? Also, where can I obtain small-size hardware for hobby projects?

Mr. L. A. B., Boston, Mass.

We do not recommend the construction of a 3-wheel bandsaw. Our reasons for this are the difficulty of obtaining suitable blades to operate on small-diameter wheels, the frequent breakage of blades and the difficulty of constructing a sufficiently rigid frame from ordinary materials.

We suggest you consider a kit from the Gilliom Power Tool Co., St. Charles, Mo. The kit is complete, including all hardware and the wheels for making a 2-wheel bandsaw of conventional design. Small hardware can be obtained from several of our advertisers who specialize in items for the home craftsmen.

We have trouble keeping paint on our front window sill. The sill is redwood and the acid in this wood eats the paint, turning it dark. We have used aluminum paint as a base, but it did not seem to help. What can be done to stop this acid action.

Mr. E. J., California.

Acid in redwood—genuine redwood that has been properly kiln dried or air dried—is new to us. Also, are you referring to the sill or to the stool? The sill is outside the sash, the stool is on the room side. You did not say, so we will assume you are referring to the stool. We are inclined to think the trouble you describe is due not to acid in the wood, but rather to the presence of moisture. This will form a mildew, a fungus growth that forms on the surface of the paint and discolors it as you describe. The remedy is to remove the discolored paint entirely, coat the bare wood with an undercoater, then follow with a special paint that contains a mildew-resistant chemical. This usually cures the trouble.



Our two-year-old home has aluminum siding all around except for the two gable ends on the north and south that are of redwood siding. We have been trying to preserve the natural color of the wood by using a marine varnish, but we have had to varnish the wood every spring and fall. The varnish does not blister or peel, it simply wears off from weather. Is there any preparation we can use that will stay on for a reasonable length of time? Mrs. A. O., Knoxville, Iowa.

No, there is no clear finish that will stand up for more than a season or two under the conditions you describe. There are opaque finishes that will give several years' service, also semi-opaque finishing materials that will give nearly equal service, but all must be renewed more often than conventional paints.

Note in a number of articles in **WORKBENCH** that the use of veneering is recommended for use on furniture and other items. I understand that furniture and cabinetmakers in this country and England used veneers extensively in the 1600s and 1700s, but what is the earliest recorded use of veneers? Mr. R.L.H., Phoenix, Ariz.

Wood veneers have been used over core stock from earliest antiquity. Not too long ago several veneered pieces were found in ancient ruins, the age of the pieces was estimated to be more than 3,000 years old. There really is nothing new about veneering. We have better adhesives today, and the veneer stock is more accurately dimensioned, but the principles of veneering remain the same.

We bought an old house and are fixing it up. Most of the rooms are in good shape, but a second floor bedroom needs some structural work. The floor of this 12 x 12-ft room sags about 1 1/4 in. We would like to tile this floor, but it certainly must be leveled first. What can we do?

Mrs. E. B., New Jersey.

You did not give us complete information. You merely say that the bedroom is on the second floor, but do not say over what room the bedroom is located. If, for example, the bedroom is over the living room, then it may be possible to lift the sagging floor with jacks and support it on open beams. A properly beamed ceiling in a living room is quite attractive. The room



in question may be over another bedroom, over a kitchen, or partly over a load-bearing wall, as often happens in older homes. If the latter is the case, the only practical thing to do is take off the plaster from the downstairs ceiling, install additional joists bolted to the originals—after jacking level—then replaster. In any case, a lot of hard work is going to be required.

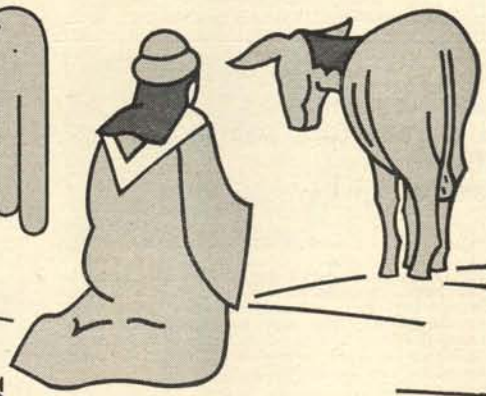


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2. This hard-to-identify item had a couple of coats of paint, covered with a thick coat of colored varnish.



Here is a product that will remove any finish, including epoxies and urethanes, and "pull" any kind of dye or stain from the wood. Just one application is required to remove as many coats as would be applied to a surface. (Time is re-



quired, of course; multi-layer finishes on objects a couple of hundred years old have required 24 hrs. or more.) Plain water is used to flush away the softened finish, no matter how long the stripper has been on the surface. For ordinary jobs the stripper loosens the finish in 15 to 30 seconds. If you rush the job, a second coat of stripper is required to draw out the stain.

To test the claim that one application of stripper would remove several coats of finish, we chose the unusual item in Figs. 1, 2 and 3. This had several coats of paint, over which had been applied a color varnish. One side of the cabinet was coated with the stripper as quickly as possible, then a scrub brush and water were used to remove the loosened finish. Instructions call for the brush to be used only for grooves and carvings, but



3. A thick coat of remover was brushed on, then scrub brush and water used to remove the paint, varnish and stain.



after using it on the edge of the cabinet top we found it worked so well we scrubbed down the whole side. You will note in Fig. 1 that more remover should be applied inside the desk to remove residue. The dark spot on the edge of the top is a burn.

The removing of stain was the claim we doubted most. We have tested products that made this claim, but none ever did the job. Our test piece was one of the mirror supports from an old mahogany dresser, Fig. 4. This had been stained a dark "mahogany" red, then finished with several layers of varnish. The result is an almost black finish. We flowed the stripper



4. Mirror support from old mahogany dresser was heavily stained, made fine test for stain-removing qualities.



5. Coarse steel wool and water were used to scrub finish from mirror support. Finish did not get gummy.



6. To thoroughly remove stain, second application of stripper was made while wood was still wet; stain washed out.

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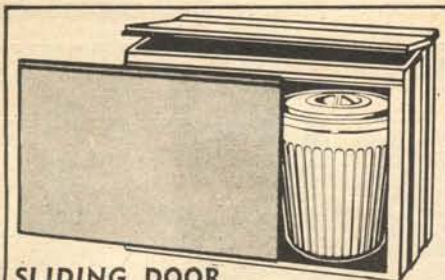
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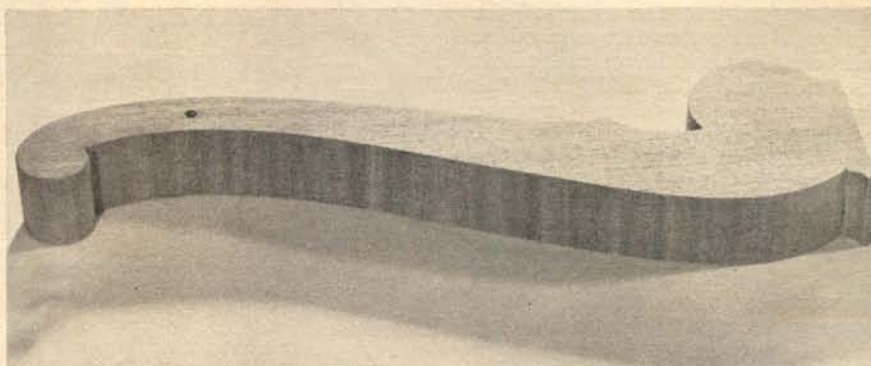
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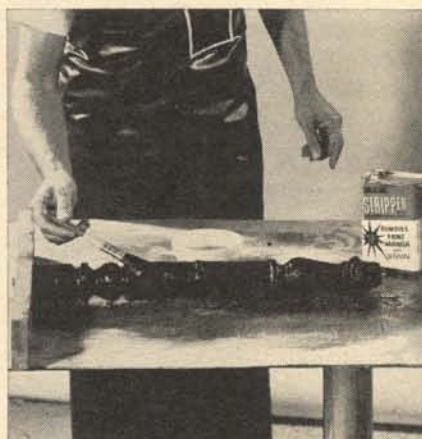
7. After mahogany mirror support was completely dry it was apparent that all stain was removed. There was no bleaching action, wood had natural red hue.

on with a brush, Fig. 4, then immediately wiped off the loosened finish with coarse steel wool and cold water, Fig. 5. None of the stain was removed in this short time. Following instructions, we applied another coat of stripper to the still-wet surface. After letting the stripper work for about two minutes we scrubbed again, Fig. 6, working with water and steel wool until the stain stopped running out of the wood. When the wood had dried, Fig. 7, the stain was gone. The natural pink of the mahogany would require a light bleaching if a blonde stain were used. The wood readily accepted a light brown stain.

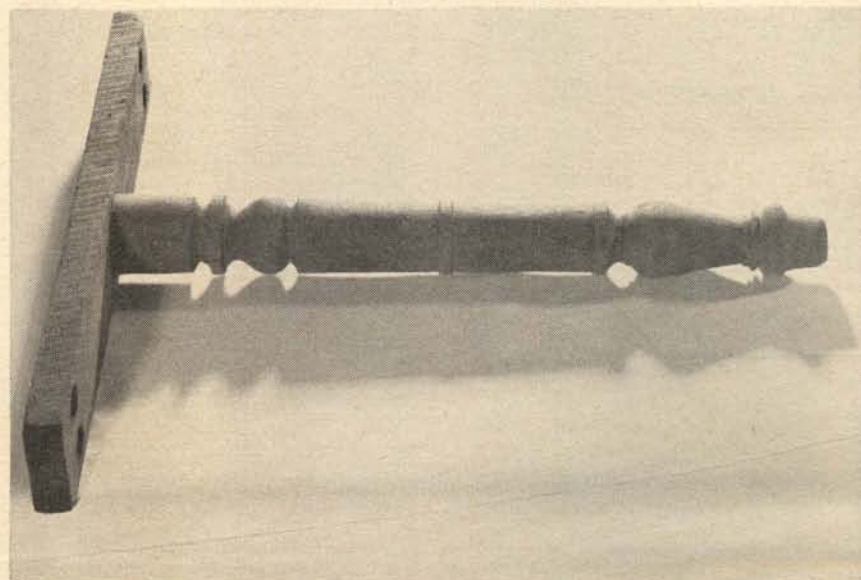
As a final test we worked on an old table leg, Figs. 8 and 9. The results are apparent. The stripper does not burn your hands, so gloves are needed only for sensitive skin.

Our one criticism of the product is that it is not at present available in all areas. It will be as soon as qualified dealers can be found. If

your local paint or hardware dealer does not have Bix Stripper, have him contact Bix Manufacturing Co., West Point, Iowa.  $\triangle \triangle$



8. Old leg with many coats of finish was stripped clean in just twenty minutes. Scrub brush was needed.



9. After leg was thoroughly dry, close examination showed it to be completely clean of finish and stain. Mahogany would require bleaching for light colors.



# REPAIRS FROM TUBES

Would you like to eliminate the need for tearing out the plumbing under a sink to get at a leaking joint? Or forget about replacing a length of soil pipe that has holes rusted through it? Put away the wrenches and tools and look around your favorite hardware or building-supply dealer for some of the repair materials now available in tubes. Some are based on epoxies, others are special adhesives containing powdered metal. They stick to most surfaces that have been cleaned well, and the repair can be sanded, filed, even drilled, then painted. You can repair chipped porcelain, calk around the bathtub and wall, squeeze a rubber gasket from a tube. A selection of tubes of various repair materials in your shop will save you a lot of time and labor. Anything that will do that is welcome in any shop.  $\Delta \Delta$

*Photos of DURO-PLASTIC products, Courtesy The Woodhill Chemical Co.*



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Pine wall boxes were as important a part of Colonial life as the cocked hat, and even today they remain

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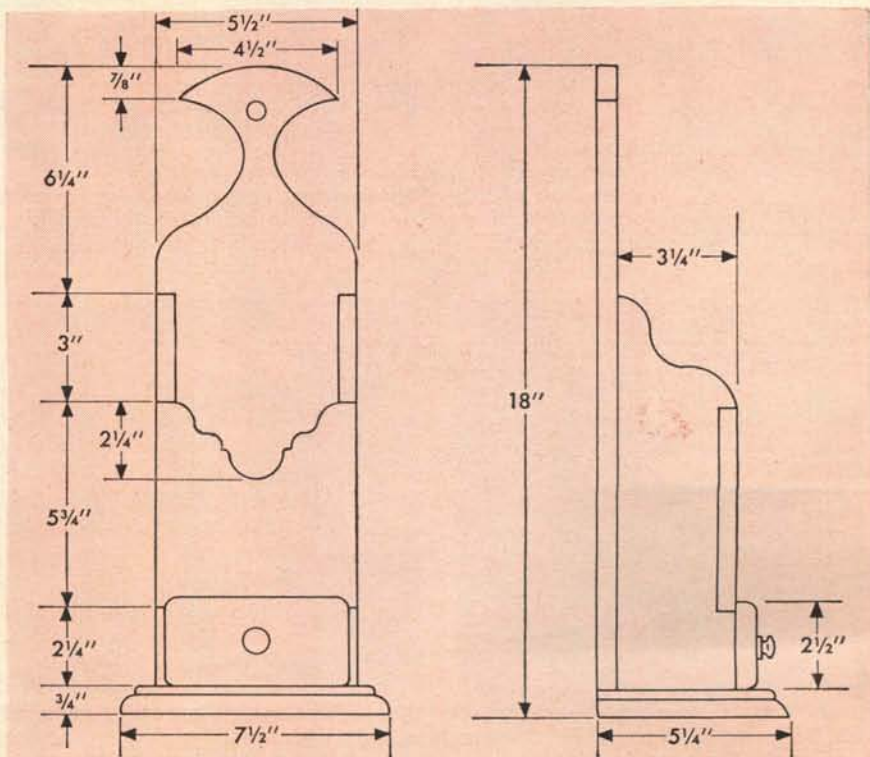
Patrick K. Snook

as useful as they are attractive.

Originally built in a wide variety of sizes and shapes, these boxes are ideal for storing everything from car keys to cigarettes and matches. At Christmas they make fine holders for holiday mail. With the addition of a simple sheet-metal liner they become a planter or receptacle for cut flowers.

The "fish-tail" box probably originally was used to hold smoking equipment or candles. The high top would afford protection to the fragile, long-stemmed clay pipes popular during this period and the small drawer would be used for tobacco. If the top were used for candles, you would expect to find flint and steel in the drawer.

The two larger boxes with hinged

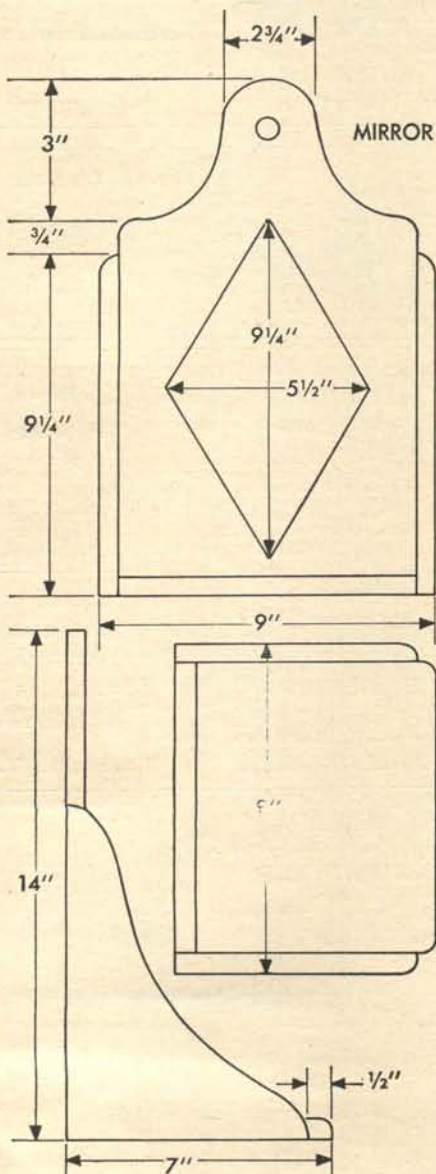




lids were used to store kitchen staples, such as salt, sugar and tea. The candle scone served the



Scrap of mirror is recessed into back of candle shelf. To be truly authentic, use inexpensive "rippled" mirror.



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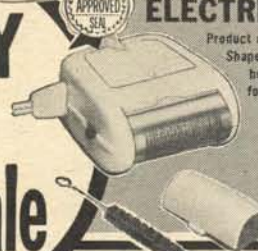


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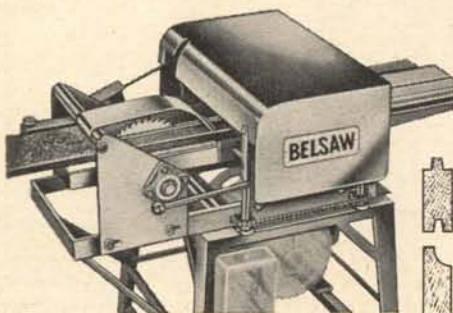
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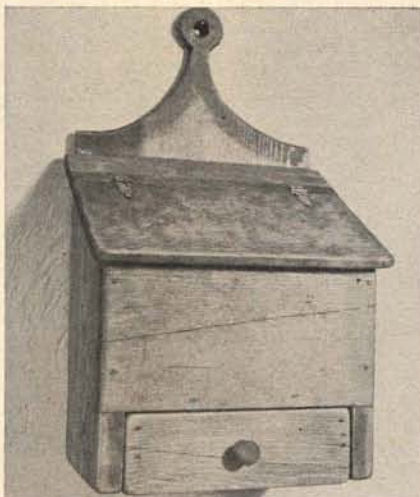
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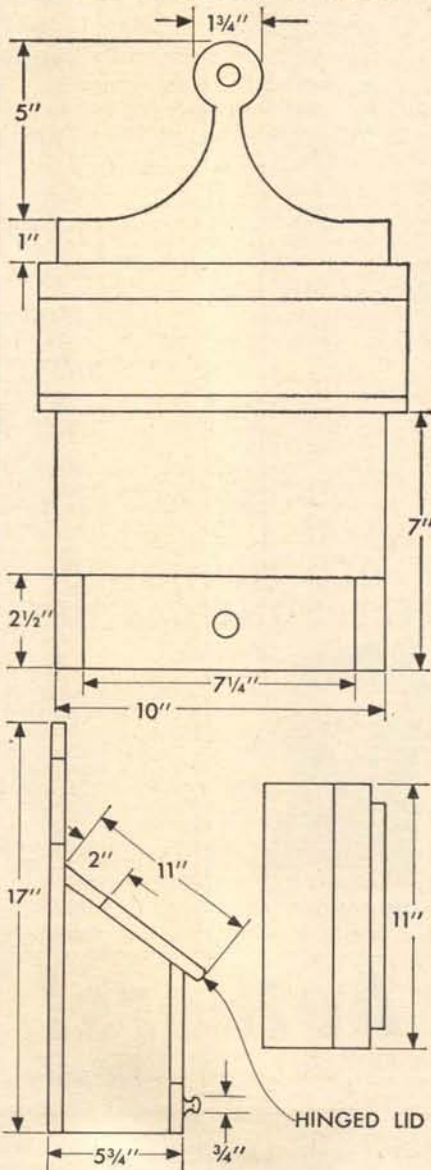
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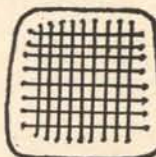


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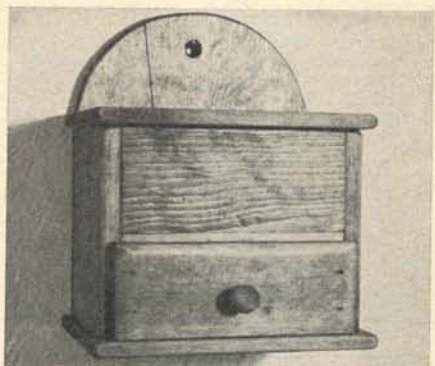
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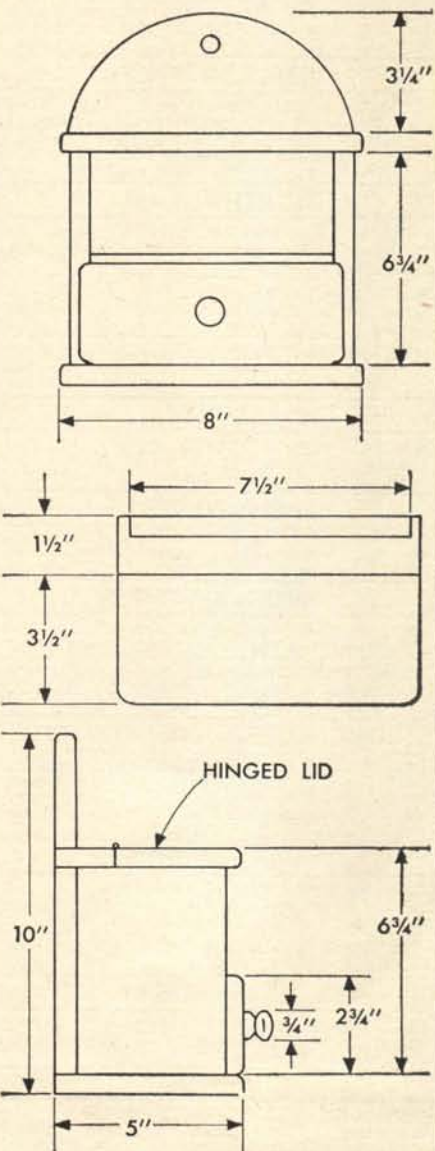
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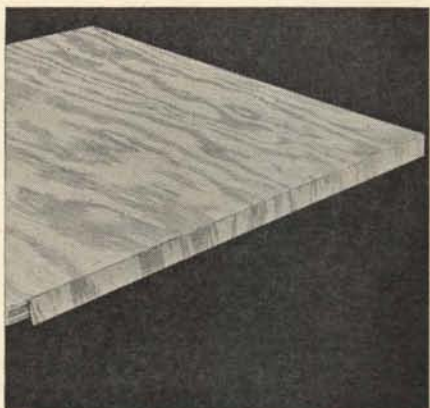
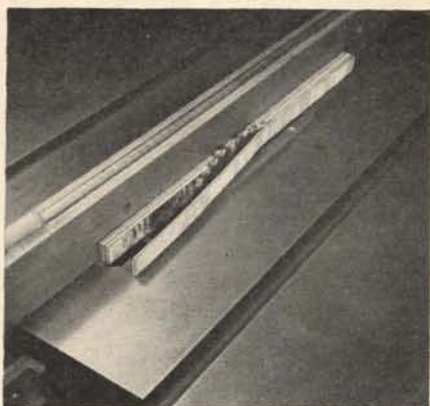
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Plasti-cushion, 85-WO-113, Elyria, Ohio.

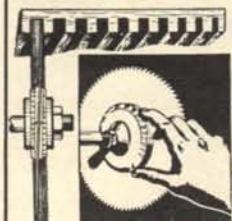
## "Waterfall" Plywood Edge



"Waterfalling" is the experts' technique for hiding a plywood edge while making it appear that the surface grain runs continuously over the edge. To do it, cut the plywood oversize in both directions slightly more than twice the thickness of the required piece. From each edge you then cut a strip equal to the thickness of the plywood. From these strips cut off the surface veneer and glue it to the edge from which the strip was cut originally. The match is not perfect because of the material removed by the saw kerf, but is close. Use a push stick when slicing off the veneer from the narrow strips.

DeCristoforo, Los Altos, Calif.

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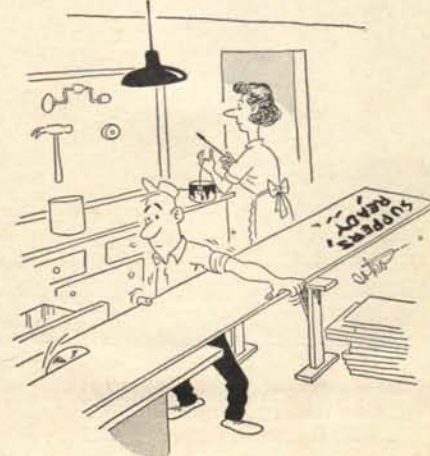
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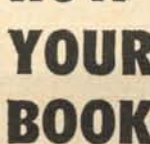
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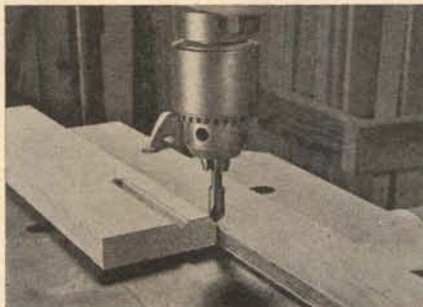
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# SHOP TIPS

## Countersink As Router



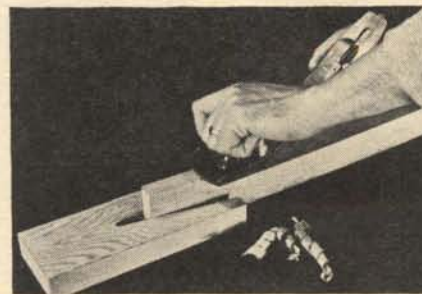
An ordinary wood or metal-cutting countersink can be used in a drill press for chamfering edges or forming V-grooves. Clamp an improvised fence to the drill-press table and feed the stock slowly under the bit. Use the press at its highest speed.

## "Tipped" Chisel Handles



In most cases the wooden handle of a chisel "goes" before the blade does. When a handle does require reworking, cut off the banged-up end and replace it with a large furniture glide. In fact, this is a good procedure even for new chisels. DeCristoforo, Los Altos, Calif.

## V-Shape Bench Stop



You can easily make a bench stop that will handle a variety of wood thicknesses when it is necessary to secure stock on edge for hand planing. Make the block from a 12-in. piece of 2 x 4, shaping it in a 6-in.-long V-shape that tapers from about 1 1/4 in. to 3/16 in. Best bet, so you do not clutter your bench, is to clamp the block to the bench top whenever it is needed.

## Sharpening Chain Saw



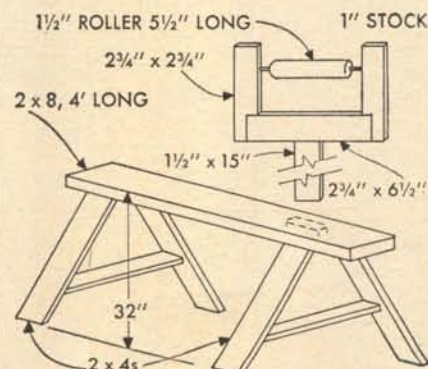
Sharpening of some types of chain-saw blades is done quickly and easily by using a hand grinder and small stone. Choose a stone with a circumference that will fit the curve of the teeth of the blade.

## Sealing Plastic

Plastic bags, such as used for clothes returned from the cleaner or shirts from the laundry are ideal for many jobs. I keep special tools sealed in them to prevent rust and corrosion. The problem was to change the shape of the bags. I found the best way was to cut the bags to shape, then fold heavy-duty aluminum foil over the cut. A soldering gun or household iron then can be used to "press" the plastic and "weld" the seam.

C. Kimbrough, Cleveland, Ohio.

## Adjustable Support



To save space in my workshop I made an adjustable work support as an accessory for a wooden sawhorse, rather than as a separate item. The accessory is made as indicated, and is fitted in a slot cut in the top of the horse. A clamp on the shank of the accessory holds it at the desired height.

L. A. Hanchette, Peoria, Ill.





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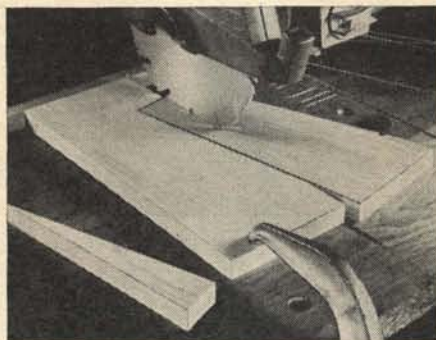


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## Odd-Angle Sawing



If your miter gauge won't provide the angle you need, or the workpiece can't be handled in the usual way, use the "guidestick method" as practiced by the experts. Keep on hand a strip of wood that will just fit the miter-gauge slot; to it tack the workpiece at the angle you require and run it over the saw blade as shown.

## Glue-Bottle Cap



When I lost the cap for my glue bottle I replaced it with the plastic cap from a used-up tube of toothpaste. The threaded cap made a better seal than the original top which was a slip-fit.

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6311 Yucca St., Hollywood 28, Calif.



# PHIL RIZZUTO . . . Radio Network Sportscaster and Former Yankee Shortstop DISCOVERS A RICHLY REWARDING NEW NATIONAL PASTIME!

"There's a new indoor pastime I'd been introduced to recently that has me wondering where it's been all my life. Until I outfitted the basement of my new home with a set of American Machine power tools, I had no idea how much fun it could be to make things out of wood—nor how easy it can really be. I am constantly amazed with the accuracy, speed and ease with which I can now make useful and beautiful things for the house, for the kids—and for my own pleasure and convenience. I don't know how they do it, but the remarkable low cost of these professional quality tools has taken nothing away from their ability to do a job."



THE CHOICE OF PHIL RIZZUTO AND  
A HALF MILLION OTHER HOBBYISTS



## POWER TOOLS

Buy direct from our factory  
**SAVE AS MUCH AS 80%**

### 8" TILT ARBOR POWER SAW

## \$14.95

f.o.b. factory. Wt. 25 lbs.

Includes completely assembled cast iron and steel 8" tilt arbor power saw with ground cast iron table . . . less blade. If desired, RIP FENCE for easier work alignment, \$3.50 additional



**REVOLUTIONARY PATENTS DECREASE COSTS, INCREASE EFFICIENCY**  
Full scale power tools of heavy duty 100% cast iron and steel. Streamlined design reduces weight, cuts material and production costs. Special patents provide added efficiency, accuracy, savings. Parts made, assembled, tested and packed right in our own factories, shipped direct . . . save store profits.

**DOES WORK OF \$75 BENCH SAW**  
as is. Converts easily to equal any \$300 floor model cabinet units! Crosscuts, rips, mitres, cuts compound angles, dados, makes coves and mouldings. **FREE CABINET BASE PLANS**

Use as portable bench saw as received (inset photo) . . . or transform easily and inexpensively into floor model (as shown) guar. to do work of floor models costing \$300. **FREE plans** . . . sheet of 3/4" plywood and 3-4 hours are all you'll need. Use your AMCO saw for cutting. Plans provide 27" x 24" work surface, 33" height, pullout sawdust bin, tool storage compartment. **UNCONDITIONAL 10 YEAR GUARANTEE**

**BLADE TILTS . . . TABLE STAYS LEVEL**

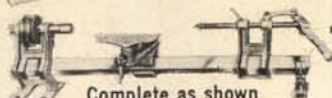
- Locks securely at any angle to 50°, raises, lowers 0"-2 1/4"
- Patented tilt mechanism, accurate etched scale
- Patented motor mount takes std. 1/4 h.p. or larger motor, keeps belt tight, assures perfect alignment at any angle, transmits full power
- Takes std. blade, saw insert removes to take dadoe heads, cutters, etc. (not incl.)
- Accurate mitre gauge assembly
- Ground spindle
- Enclosed steel base
- "Compo" bearings
- Accessories available at factory prices
- RIP FENCE, if desired for easier work alignment: Std. size (for bench saw) \$3.50; larger fence (for cabinet base, as ill'd.) \$4.50.

### 6" SWING 3-FT. LATHE

## \$9.85

f.o.b. factory

Optional Faceplate for turning bowls, trays, lamp bases, rosettes, etc. \$2.50



Complete as shown

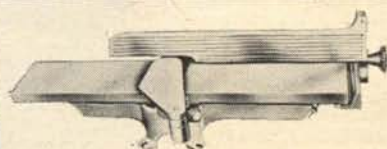
**DOES THE WORK OF \$40 UNITS—**  
Sturdy all cast iron power tool turns wood or plastics with the precision and speed of machines selling for 4 times as much. Tubular steel bed, ball thrust cup center, spur center, T-Rest assembly, lever action tail stock. 2 speed pulley. Fits any moto. **UNCONDITIONAL 10 YR. GUARANTEE**

### FULL 22" LONG, 4 1/8" JOINTER-PLANER

## \$19.95

F.O.B. Factory Complete as shown  
100% precision ground cast iron and steel.

**PROVED BY  
MORE THAN  
500,000  
USERS**



**DOES WORK OF \$60 UNITS**

Now, at little more than a hand tool price, a guaranteed professional quality precision machine which does same work as skilled hand planing . . . much faster, more accurately. Make accurate glue joints; rabbeting cuts for doors, window frames, table drawers; square taper cuts for chair legs; accurate beveling.

- Precision ground cast iron tables, adjustable for depth of cut
- Rigid cast iron base
- New patent-pending design holds clearance between knives and tables at any depth
- Rabbet depth 3/8"
- Hardened, ground high speed steel knives
- Patent-pending fence adjustable to any position, any angle 0°-50°
- Patent pending lift-off guard (nothing to loosen!)
- Balanced steel cutter head.

**UNCONDITIONAL 10-YEAR GUARANTEE.**

### 1/3 HP ELECTRIC MOTOR

SPECIAL AMCO PRICE  
(when purchased with any unit in this ad)

## \$10.95

f.o.b. factory  
if purchased separately, \$16.95



**SPECIAL DIRECT FACTORY PURCHASE**  
Brand new factory-fresh motors for use with any of the units on this page. Limited quantity purchase . . . first come, first served. Wt.: 17 lbs. **FULL 1-YEAR WARRANTY**

### MAIL COUPON TODAY!

AMERICAN MACHINE & TOOL CO., Dept. WB-113, Royersford, Pa. Please send me the units checked. Payment in full enclosed \$ . . . or \$3 deposit each item enclosed, balance C.O.D. ☐ I MUST BE FULLY SATISFIED OR WILL RETURN UNIT WITHIN 10 DAYS FOR FULL REFUND. No questions asked.

☐ 8" Power Saw at \$14.95 ☐ Jointer-Planer at \$19.95  
☐ Standard Rip Fence #354 at \$3.50 ☐ Lathe at \$9.85  
☐ Long Rip Fence #354C at \$4.50 ☐ Drill Press at \$29.95

1/3 hp GE Motor: ☐ \$10.95 (with purchase of other item)  
☐ \$16.95 (if purchased separately)

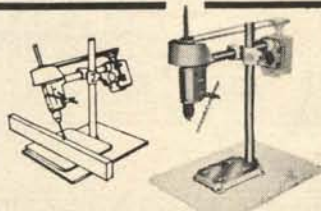
NAME . . . . .  
 ADDRESS . . . . .  
 CITY . . . . . ZONE . . . . . STATE . . . . .  
 (please print)

### 32" RADIAL DRILL PRESS

## \$29.95

F.O.B. Factory  
1/2" Cap. Jacob's Chuck Inc.  
Shipping Wt. 30 lbs.

**DOES WORK  
OF \$90  
UNITS . . .  
AND A  
GREAT  
DEAL MORE**



Industrial quality precision machine with all features of standard drill press, many extras. Head raises, lowers. Greatly increased depth of throat. Can be pre-set to any angle or position for on-or-off table drilling . . . even horizontal drilling. All cast iron and steel. **UNCONDITIONAL 10 YEAR GUARANTEE**

### 10 DAY MONEY BACK GUARANTEE

You must be satisfied or money refunded.

**AMERICAN MACHINE & TOOL COMPANY**

Dept. WB-113, Royersford, Pa.

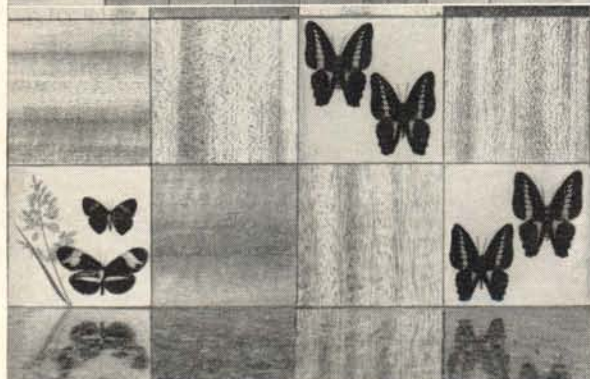


## HOW YOU CAN BEAUTIFY YOUR KITCHEN WITH CASTOGLAS

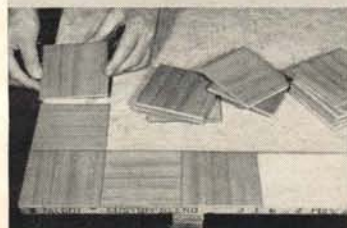
Castoglas was used imaginatively in a number of different ways in transforming a dark and outmoded kitchen into a bright and cheerful combination kitchen-breakfast room:

1. For covering the flakeboard countertop to produce a glass-like surface. Photos below illustrate how it was done.
2. For "glazing" the Mahogany and Maple wood tiles and permanently laminating the leaves and grasses upon them and also the paper napkins (the paper becomes invisible and the design remains).
3. For casting standard tile-size solid blocks of Castoglas in ceramic molds and embedding butterflies in them, (and, of course, almost anything else you wish to embed).
4. For laminating the beautiful translucent glass panels, which serve as dividing screens, with embedments of bamboo leaves.
5. For casting the brilliantly colored fish sculptures—a very fascinating new project.
6. For making distinctive trays with handpainted rooster designs (you paint them yourself) like the one on the kitchen counter at right.

Well, there you have it. And these are only a few of the truly fascinating possibilities Castoglas offers you.



**HOW TO COVER THE KITCHEN COUNTER WITH CASTOGLAS**—see photos from left to right: Counter is made of  $\frac{3}{4}$  inch thick flakeboard with border of walnut tiles. Hardener is mixed with liquid Castoglas, poured over



### Pour Yourself a

## KITCHEN COUNTER AND TABLE TOP

**And Cast Unique Wall Tiles with Embedments of Real Leaves, Grasses, flowers, colorful butterflies, seashells, coins, travel mementos and other objects of personal interest. You can also permanently encase metal, foil, wire, glass, fabrics and paper and combine these castings and laminates with all kinds of other materials. Versatile? You have never seen anything like it! And equally amazing is the easy way this wonderful stuff can be worked.**

## CASTOGLAS POURS LIKE HONEY AND SETS LIKE GLASS WITHIN 60 MINUTES AT ROOM TEMPERATURE

You can cast it, laminate it, flow it on or paint with it. You can mix your own transparent, translucent or opaque colors. No heat or pressure is required and hence no special tools and no equipment. We furnish all needed materials and complete illustrated directions. The Cost? A mere fraction of conventional materials—one of the first things you'll discover for yourself.

### OUR NEW BOOKLET

## "How You Can Beautify Your Kitchen With Castoglas"

is full of exciting do-it-yourself ideas, that are practical and economical and completely different from anything you have ever read or seen before. For your copy please mail 25c to Dept. P-9.

**THE CASTOLITE COMPANY**

**Woodstock, Illinois**

**CASTOGLAS IS WATERPROOF, STAIN PROOF, FADEPROOF AND UNAFFECTED BY:** boiling water, hot pots or pans, alcohol, vinegar, fruit juice, hot grease, tea, coffee, milk, oils, naphtha, cleaning fluids, benzene, gasoline, ink, dyes, pigments, wax crayon, lead pencil, to name but just a few. Withstands all kinds of abuse. Will not "waterspot" and is as easily cleaned with a damp cloth as any glass surface.



clean-sanded wood and covered with laminating film. Castoglas hardens in about one hour. Film is stripped off and finished counter has appearance of plate glass bonded to wood.



Get into...

# PLASTIC LAMINATING AT HOME!

Sensational New

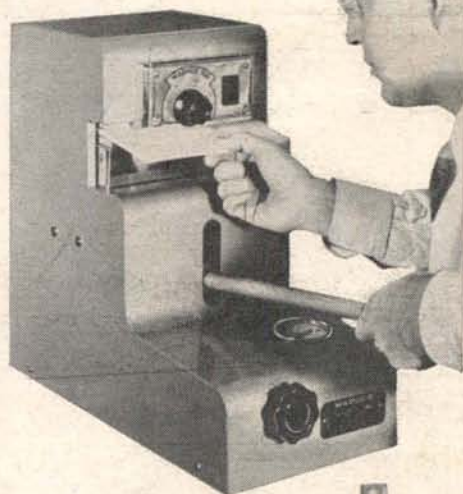
**"ONE MAN  
BUSINESS"**

...pays \$10 to \$20 profit  
for each dollar of cost.

Make Up to \$5 an Hour by  
our **MAGIC MAIL PLAN**... get  
orders and cash from your mailman!

Here's the newest and most fascinating of all home-operated businesses. For the first time, a simplified machine brings the fabulous profits of Plastic Sealing and Plastic Laminating within the reach of the small operator. Can be

operated in a corner of the kitchen, basement, or garage. And any man or woman, regardless of age, education, or experience—can learn this interesting work in a few minutes of reading—can turn out professional jobs after one hour's practice.



## TWO EXCITING FIELDS FOR BIG PROFITS!

No house-to-house canvassing. No face-to-face selling. We not only supply the equipment you need for the work, but also show you exactly how to cash in big daily profits from two big demand fields.

### A FORTUNE IN PLASTIC SEALING

Millions of people want to protect valuable cards, photographs, documents and papers against wear, soil, and damage. By our MAGIC MAIL Plan you get this business through the mails. Open envelopes, take out money and orders. Details of plan will amaze you. It will be sent free. We even furnish financing help. Just mail coupon.

### ENORMOUS PROFITS IN LAMINATING

A creative, artistic business. Gift shops sell your entire output. Just a few of thousands of giftwares illustrated on this page. Beautiful colors. Endless designs. Exclusive "one of a kind" appeal brings sales at ten to twenty times the cost of materials. Beautiful illustrations and instructions for making these artistic novelties sent free.

**NO MONEY—  
Just Send Name!**

**We'll Even Help  
with Financing!**

**WARNER ELECTRIC CO.**

1512 Jarvis, Dept. L-6-M Chicago 26, Illinois

The opportunities in Plastic Laminating are so big that space here does not permit even skimming the surface. To get any idea

**FREE**

at all of the size of these markets and your place in this sensational business you must read the details. See for yourself how easy it is to do the work—how you can put plastic sheets into your machine and take out a fortune—how money and orders come to you in the mail—how gift shops clamor to get more and more of your creations—how you can start with one machine and build up a big production plant with others doing the work—how you can get money and business from every State in the Union—how you can achieve independence without study or experience.



**RUSH COUPON**

Never before has such an opportunity been offered the small, home-operator—an opportunity to gain complete personal independence in a big money business of your own. Don't lose a minute. Get the facts at once. All information, fully illustrated with pictures, is free. Send the coupon—or send your name and address on a postcard. There is no charge now, or at any other time. Send for the information on this exciting opportunity today.

### Cash Money Comes to You in the Mail

By our MAGIC MAIL Plan you sit at home, send out mail, and get back money and orders. Additional profits in supplying lifetime protection for **SNAPSHOTS—IDENTIFICATION CARDS—DISCHARGE PAPERS—DRIVERS' LICENSES—SOCIAL SECURITY CARDS—VOTERS REG. CARDS—MENUS—BIRTH CERTIFICATES—CREDIT CARDS—BIRTH AND WEDDING ANNOUNCEMENTS—PASSES—DOCUMENTS.**

Lifetime protection. See how laminating prevents soiling, wear, and moisture damage with flexible, plastic covers.



### Thousands of Beautiful ART CREATIONS

Made by Laminating as explained in our Free information. Send coupon for list and pictures of **COSTUME JEWELRY—JEWELS—CIGARETTE BOXES—CUFF LINKS—NOVELTY BUTTONS—TRAYS—CANDLESTICKS—COASTERS—CLOCK CASES—LAMP BASES—PICTURE FRAMES—BOOK ENDS—CHARMS—ADVERTISING SIGNS—NAME PLATES—BELT BUCKLES—CHECKERS—PAPER KNIVES—CHESSMEN—BOOKMARKS—TIE RACKS—KEEPSAKES OF ALL KINDS.**

**WARNER ELECTRIC CO., Dept. L-6-M**  
1512 Jarvis Avenue, Chicago 26, Illinois

Please mail, postage prepaid, complete information with illustrations showing the things I can make and the money possibilities in Plastic Laminating. All free. No Salesman is to call. Also, tell me your Financing Plan and how I get orders and money by the MAGIC MAIL Plan.

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